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Mechanical Division Convention (Report) Number

JULY 8, 1950

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WEEK AT A GLANCE

THIS ISSUE'S HIGHLIGHTS: Electric motor armature bearing lubrication progress, by R. A. Hutchins of General Electric (page 29). . . . Report of the Denver meeting of the A.A.R. Safety Section (page 27). . . . How the Pennsylvania's "Intelex" reservations system works (page 36). . . . Payroll accounting as the Lehigh & New England does it (page 24).

TECHNOLOGICAL PROGRESS: Comprehensive abstracts appear in this issue, beginning on page 49, of the committee reports presented and considered at the recent annual meeting in Chicago of the Mechanical Division of the Association of American Railroads. Thus, year after year, detail after detail, are the practices and equipment of the railroad industry painstakingly and steadily improved. Passenger car standardization, refrigerator car design, safety appliances, interchange rules, lubrication, brakes, hot box alarms, fire prevention, locomotive developments, wheels—such are the unglamorous but essential fields of research and experimentation to which mechanical department officers continue—with great profit to the industry—to devote their time and talents.

SHOP AT SPRINGFIELD: As part of a $5-million modernizing and improvement program undertaken at Springfield, Mo., the Frisco's new Diesel-locomotive repair shop represents a definite contribution to that road's operating efficiency. It is the subject of an illustrated article (page 32) which emphasizes the attention devoted in the design and construction of this facility to functional uses of color, adequate light, and simple but novel "perimeter" heating.

CAR SUPPLY CONFERENCE: Our news pages report the decision of the directors of the A.A.R. to call a member road meeting at Chicago July 28 to explore the freight car supply situation and means of coping with it.

NET BETTERS 1949 FIGURE: Despite strikes and higher wage and material costs, the net income of the Class I roads, as estimated by the Bureau of Railway Economics, was greater in the first five months of this year than in the same 1949 period—$133 million vs. $131 million. This result was attained despite a $190-million drop in gross revenues, a fact worth the attention of those lawyers and propaganda purveyors who profess to believe that the railroads' ills can all be ascribed to inefficiency.

STRIKE NEWS: Again we go to press with railroad and union negotiators and National Mediation Board members very busy in Chicago while four western railroads stand idle and a fifth is providing main-line passenger service only. Next Saturday the Railway Labor Act "cooling off period" expires for the trainmen, conductors and yardmasters, but no evidence has been discovered that the brothers' wrath over last month's emergency board decision has cooled sufficiently for them to accept it. Meanwhile in Washington the Fourth of July holiday has not prevented senatorial discussion of the deadlock resulting from the ineffectiveness of the statute as a strike-preventer, and President Truman has called on the striking switchmen to go back to work, forthrightly backing up his emergency board. Our news pages summarize the situation at press time as seen by *Railway Age* reporters on the scene in Washington and Chicago.

UNJUSTIFIABLE—That's what Mr. Truman on Thursday labeled the switchmen's strike, and in referring to the recommendations of a very able emergency board he threw cold water on any hope the brothers may have had of a Rooseveltian grand gesture giving them more.

NEWS ROUND-UP: Carloadings in the third quarter are expected by the Shippers Boards to average out 9.3 per cent above last year. . . . Equipment orders include 200 box cars for the G.M.&O. and 1,000 hoppers and 15 steam switching locomotives for the N.&W. . . . Inquiries are out from the C.&O. for 1,000 hoppers and 1,000 box cars, and from the Boston & Maine for 750 box cars. . . . In September 75 railroad engineering and operating officers from several European countries are due to study American practices. . . . Commissioner Patterson has reached the arbitrary retirement age, unless exempted by executive order. . . . Brazil's privately operated Paulista railway is getting over $10 million worth of equipment from American builders. . . . The C.&O. has ordered a $4.5-million car ferry for Lake Michigan.

HOW TO GET VOTES: When the facts of the railroads' competitive position, *vis-à-vis* subsidized trucks and air lines, are competently set forth, there are few, if any, fair-minded people who will not agree that the railroads are victims of injustices that are the result of political actions and which can be corrected by political actions. The facts have been set forth competently, on the basis of careful and thorough research, by the group of railway officers who appeared this spring before the Senate subcommittee investigating land and water transportation. Despite this unassailable and overwhelming evidence, our leading editorial points out, practically nobody outside the railroad industry seems to be moved by it to do anything to better the railroads' situation. To impel the public, and particularly their own customers, the shippers, to demand such action it is the railroads' duty to demonstrate how the public's—and particularly the shippers'—own self-interest will be served by improving the political climate in which the railroads operate. Then the railroads' arguments will sink home. Then constructive action, beneficial to the railroads and the public, will follow.

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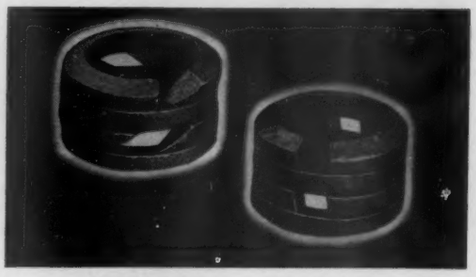

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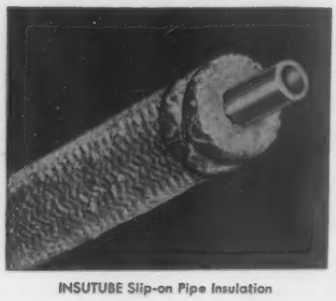

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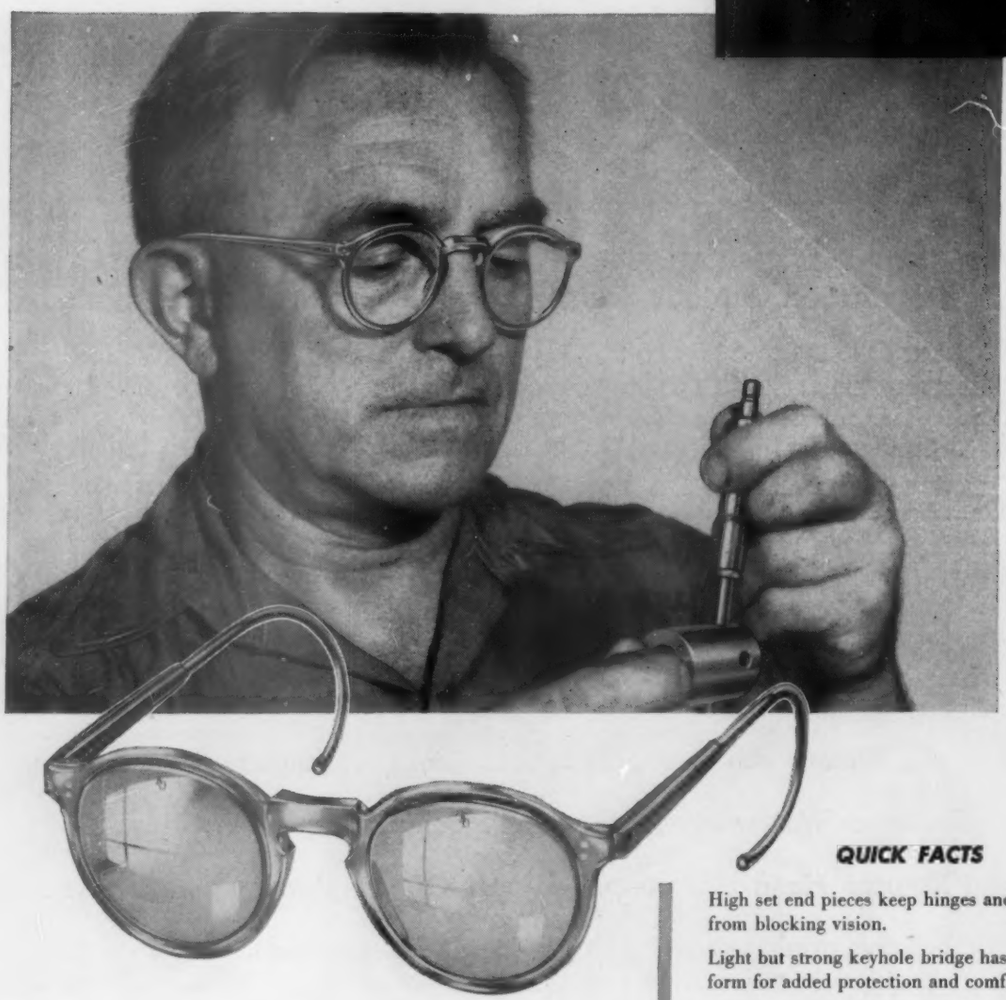

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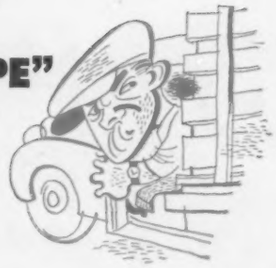

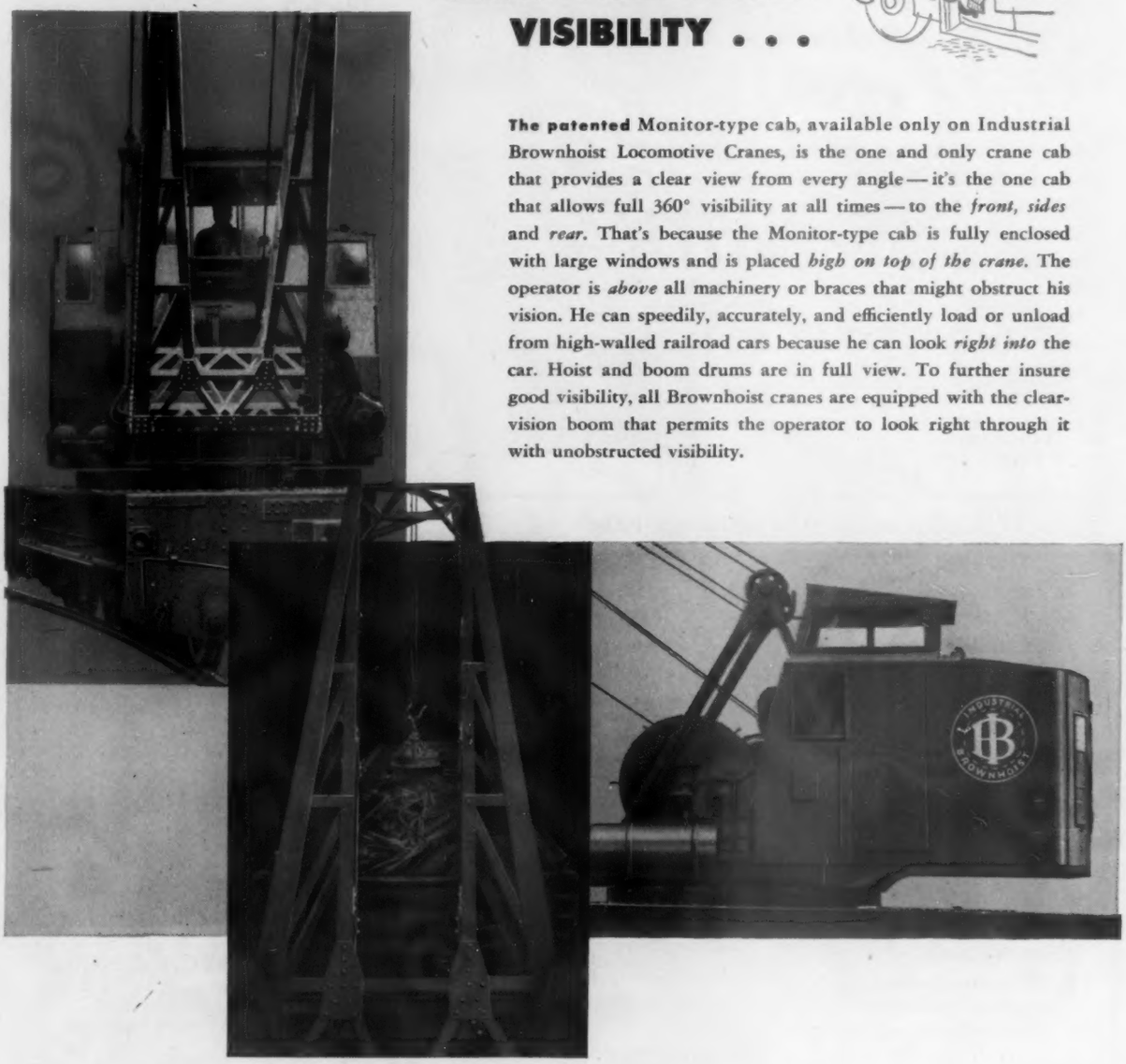

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149 **BROWNHOIST** BUILDS BETTER CRANES

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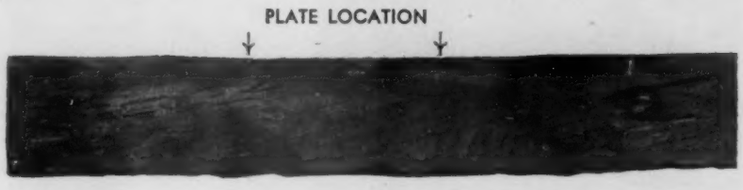
-and WITH a Resilient Tie Pad

This creosoted hard wood tie was installed near the one above, with one of our resilient tie pads made of cotton and rubber used beneath the plate. The Photograph is of the inner end of the tie. Plate cutting amounted to only .06 in., a reduction in wear, from the tie shown above, of 89%, after 8 years of service.



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Wanted, a Railroad Program Aimed at the Public's Self-Interest

Letters received in recent weeks by this paper from a considerable number of shippers raise doubts whether sufficient political help from shippers to assure revision of the legislative framework, required to enable the railroad industry to earn a living, will be forthcoming until the railroads first give a satisfactory answer to the shipper's question: "What is in it for me?"

No one seriously questions the absurdity and injustice of the comparative regulatory and tax position of the railroads. Most people who are aware of the facts will admit that the freedom from all regulation of "gypsy" truckers, in contrast to the strict surveillance over rates and service of common carriers, makes absolutely no sense. Few persons will defend the meticulous care exercised to prevent railroad common carriers from practicing any "discrimination" in rates and service—while unregulated or partially regulated carriers practice such discrimination all over the country, and thereby divert traffic from the regulated railroads.

A Thoroughly Documented Case

The list of injustices to which the railroads are subjected—to their own harm and to that of the public interest in the preservation of dependable, low-cost, common-carrier transportation—has been ably digested and documented in the testimony of the witnesses for the Association of American Railroads in the current congressional investigations into transportation. No serious effort has been made to refute this A.A.R. testimony—the evidence is unassailable and overwhelming. Nevertheless, how many Americans except railroad people and a few of their loyal friends have got up any steam over this evidence? A typical shipper reaction goes something like this:

"I am getting my goods to market in two days by truck where it used to take me two weeks by rail. Granting that there is a lot of justice in the complaints of the railroads about the nature of truck competition, why should I do anything to curtail the availability of trucks until the railroads show their ability and willingness to match or improve upon the trucks' service?"

Still other shippers complain of a high rate of loss and damage by rail, and are deaf to all evidence of inequitable regulation and taxation of the railroads, compared to that of the trucks—unless they can be shown that their interest in the railroads' cause will be compensated by better loss and damage performance than they customarily get from the railroads.

One of the nation's foremost authorities in the field of public relations has expressed the belief to us that the railroads are going to have a tough time arousing the influential public to the degree of zeal required to remove the inequities the railroads suffer in present public policy toward transportation, unless the industry holds out to the public some desirable *quid pro quo* as a reward. In a parallel case, our nation is spending billions of its taxpayers' money for the relief of want in Europe—all in the name of altruistic humanitarianism. But even the most zealous defenders of these donations, if pressed for justification of their generosity with our money, do not rest their case on altruism, but go on to

" . . . IN A GLASS BOWL"

Our business is no longer a monopoly in transportation. The competition from highway and air transportation is keen and upon unequal terms, and herein lies the heart of the railroad problem. It is largely a political one and difficult to cope with, but one which we must lick if the American railroads are to continue as a private enterprise.

I want to discuss this problem briefly in the light of what operating men can and must do. First and foremost, avoid giving an impression that the railroads are looking for sympathy. There has been a railroad problem for such a long period that it is very difficult to arouse the American people to the present dangers. Perhaps our story has not been put before them properly. Certainly a lot of them consider that we are engaged in "self-interest whining" and they get tired of hearing anyone "cry" about the railroad problems. Our day-to-day problems are those that we must lick ourselves and, naturally, nobody is going to have any sympathy for us about them, nor should we endeavor to create any sympathy for the railroad industry in connection with the broad overall problem that faces us. . . .

Railroad men are the employees of a great industry that is indispensable to our country in peace and in war. We are also the inheritors of some prejudice which arises from some of the evils that were perpetrated in the railroad industry many years ago. That evils of various kinds did exist we need not deny. It was many of those evils which brought on the wholesale regulation to which we are now subjected. Today we work in a glass bowl. There is probably no industry whose every act is more subjected to public scrutiny than that of ours. We can hardly make a move without the approval of some governmental authority. Under oath we must report a great mass of detail to the Interstate Commerce Commission and state commissions. No industry makes a more complete report to its stockholders; and the service which we render to the public is now, as it always has been, right there for everybody to see. We need not apologize for the evils of the past; they are not of our doing and they do not exist today. We can and should be proud of being American railroad men. We have accomplished much with little.

—William White, president of the Delaware, Lackawanna & Western, in an address June 7 at the annual meeting of the American Association of Railroad Superintendents in Chicago.

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insist that the donations are "good business," as a defense against militant Communism. The establishment of equity in transportation competition is called for by sound ethics and sound economics—but it certainly would not hurt to introduce, also, a convincing argument to the effect that the application of recognized principles of ethics and economics to transportation would be "good business" for the multitude of individual shippers.

The railroads could as easily state their case in terms of the selfish interest of individual shippers as they do in adherence to accepted principles of economics and ethics. Back in 1923 the railroad industry was suffering from bad public relations as a result of car shortages. In a bid for greater public esteem, leaders of the industry promised the expenditure of all necessary funds for the improvement of railroad plant and equipment. They proceeded to spend the money and they got their return in several years of relatively good earnings and almost complete freedom from adverse legislation.

Practical Application of a Principle

Today the railroads would find it impossible to promise, out of hand, commensurately large expenditures for improvements in 1950's inflated dollars, because they do not have the funds or the credit with which to purchase all the plant improvements and better equipment of which they could make effective use. But what would be amiss with listing the half-dozen or more service improvements which would have the widest shipper appeal, definitely promising these improvements just as fast as earnings and/or credit become available to make these required outlays possible? This statement could then be followed with the minimum list of legislative objectives necessary to the restoration of earnings and credit to the magnitude needed to finance the promised improvements.

If the railroads were to express their minimal legislative requirements in such terms, these objectives would lose none of their appeal to advocates of sound economics and accepted ethical principles. Experience indicates, however, that controversial legislation is seldom forced through to enactment by the vigor and votes of those whose only motive is loyalty to principle—usually the votes and voices of people more interested in themselves than in the general welfare are also required. Resistance to change in political arrangements is deeply rooted—especially when a lot of vested interests have accumulated around the *status quo*.

In testimony before the Senate interstate commerce committee (see *Railway Age* of June 3, page 45), Fairman R. Dick made a good beginning of stating the objectives of the railroads in terms of the self-interest of shippers. He asserted that the railroads had need to spend "at least $15 billion" in providing a "fully modernized" plant, but that they obviously cannot spend even a small fraction of that sum with earnings and credit at their present level. To this paper's way of thinking, an estimate of desirable expenditures would be more effective with shippers if translated into specific terms of so many projects for line, terminal, equipment, signaling and communications improvements—with an explanation of what these improvements would mean in faster, more dependable, undamaged movement—and, ultimately, in lower costs.

Further effectiveness in such an appeal to shippers would be secured if this list were put forward as a definite promise—that is, give us (1), (2), (3), (4)—specific items of legislation—and we will proceed to give you (a), (b), (c), (d)—specific items of improved plant, improved equipment, and improved service.

In a great political controversy such as that which has developed about transportation, it is a fine and satisfying thing to have a case which commands the support, as the railroad case does, of practically all competent and

objective scholars. It would, however, be an even finer accomplishment if this cause, which is quite beyond reproach in principle, could also muster enough votes to become a law. If some votes are needed to this end which cannot be won by appeals to altruism, then wherein lies the harm in garnering these needed votes by honest and well-founded appeals to self-interest? A revived and flourishing railroad industry has just as much to offer to the selfish interest of shippers in their own well-being as it does to satisfy their enthusiasm for the general welfare. As Adam Smith long ago observed: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages."

THESE CHANGING TIMES

When looking back on the history of the railroads it is natural to gain the impression that, in the early years, the fixed properties passed through a period of rapid growth and change and that now they have reached a state of maturity or stability as regards both expansion and design. While extension of lines has, no doubt, largely come to an end, the need for intensive development of railroad fixed property continues unabated. Thus, any thought that present standards of design represent the ultimate in efficiency and economy, and that further changes or improvements will be of a minor nature, is very wide of the mark.

In retrospect, the opinion comes easily that during the early years of the railroads' history improvements in the track structure occurred almost daily, and much faster than at present. This is an illusion created by viewing the past from the perspective of the present. Viewed from the rear of a moving train the telegraph poles in the distance look much closer together than those in the foreground. So it is with engineering progress.

At almost any time in the past it is not unlikely that many railroad engineers considered that the design of the tracks and other structures, after having made rapid advances in the past, had reached a state of relative stability. At one time, for example, 90-lb. rail was considered adequate for use in main-line tracks, and any suggestion then that rail weighing 132 lb. or more would become necessary in the future would have been brushed aside as fantastic. Is it not likely, then, that present design standards and maintenance practices are equally subject to change and improvement as they have been at all times in the past?

The railroads are now spending about $1 1/3 billion annually for the upkeep of their tracks and structures. The development of ways and means of making it possible to effect substantial reductions in these expenditures, with no unfavorable effect on standards of maintenance, is, or should be, the objective of every maintenance and engineering officer. Quite likely, however, revolutionary changes in design standards and maintenance practices must take place before maintenance costs can be materially reduced. Therefore, the assumption that all the major milestones of progress lie in the past, and that only minor refinements can be expected in the future, would be tantamount to admitting that the railroads had reached the end of the rope in reducing the amount of labor and materials required to maintain their fixed properties.

"TO GROW AND SUSTAIN ITS ADVANCES . . ."

"To grow and sustain its advances toward new horizons, America must have adequate transportation facilities; and now, as in the past and in the years to come, its chief reliance is upon strong railroads for the mass transportation of goods and persons. . . .

"Railroad men . . . believe that each type of carrier should, in the public interest, bear all of its true costs of doing business, just as the railroads do. With conditions of competition thus equalized, each form of transportation will be employed at the work it is best fitted to perform. . . .

"As matters now stand, the railroads face a considerably more difficult situation than most other businesses, in that more of the major items of their income and outgo are controlled by public bodies, rather than by management's own discretion. . . .

"Most other industries have been able to meet their increased expenses largely by raising their prices proportionately. Wholesale commodity prices, for instance, have about doubled, and the prices received by farmers are up about 150 per cent. But for the railroads there is no such simple solution. We have had to find still more ways of cutting expenses in the face of higher unit costs—of further increasing the efficiency of our plants, and at the same time of improving the services we have to offer in a highly competitive market.

"As contractors, you need reliable, efficient and convenient railroad service at lowest possible cost. To give such service, continuing expenditures for improvements are required. To make such improvements, and to take advantage of technical developments which will permit the railroads to cut costs, thus helping to keep rates at a reasonable level, large sums of money are required. Since the railroads must stand on their own feet, without subsidies, it is necessary that they make a reasonable profit to be able to get the funds to make these expenditures. . . .

"Socialized railroading in England has not been to the advantage either of railroad employees or the industry. On the other hand, under competitive private ownership the American railroads, paying the world's highest railroad wages, have given American industry the world's best railroad service at the world's lowest rates."

—From an address by D. J. Russell, vice-president, Southern Pacific, to the Heavy Construction and Railroad Contractors Division of the Associated General Contractors of America, at San Francisco, Cal.

this is International's new all-purpose Bulk-lading side door

This is *UNI-FAB:* note flow of grain begins as soon as door is opened—***no inside barricade.***

FAMILIAR PHRASE, "Bulk-lading." ***But when it's applied to a side door, most railroad men are inclined to be skeptical.*** For over fifty years, engineers and inventors have attacked the problem of safely, ***surely*** barricading bulk shipments—and until today, the old wood grain door has been the best answer—***until today!***

Today it is a fact that Uni-Fab ***is*** the answer to bulk shipment without additional barricading. There's nothing radically different about this door except that it is ***engineered*** to utilize internal pressure for positive sealing, and to distribute the pressure properly against the patented ***double-lock and sealing device.*** Proper engineering has also contributed a positive interlocking top and bottom to eliminate loss of doors, and a loading and sampling door which swings ***up*** and ***in*** — for easy access to the load.

Forward thinking in the engineering department has designed this door—***but a compulsory partner to good engineering***—(if a product is to perform as designed)—***is an efficient and precise manufacturing technique.*** This combination is International Steel's greatest asset—and the Uni-Fab—***truly the door to a new era in bulk shipment***—is its result.

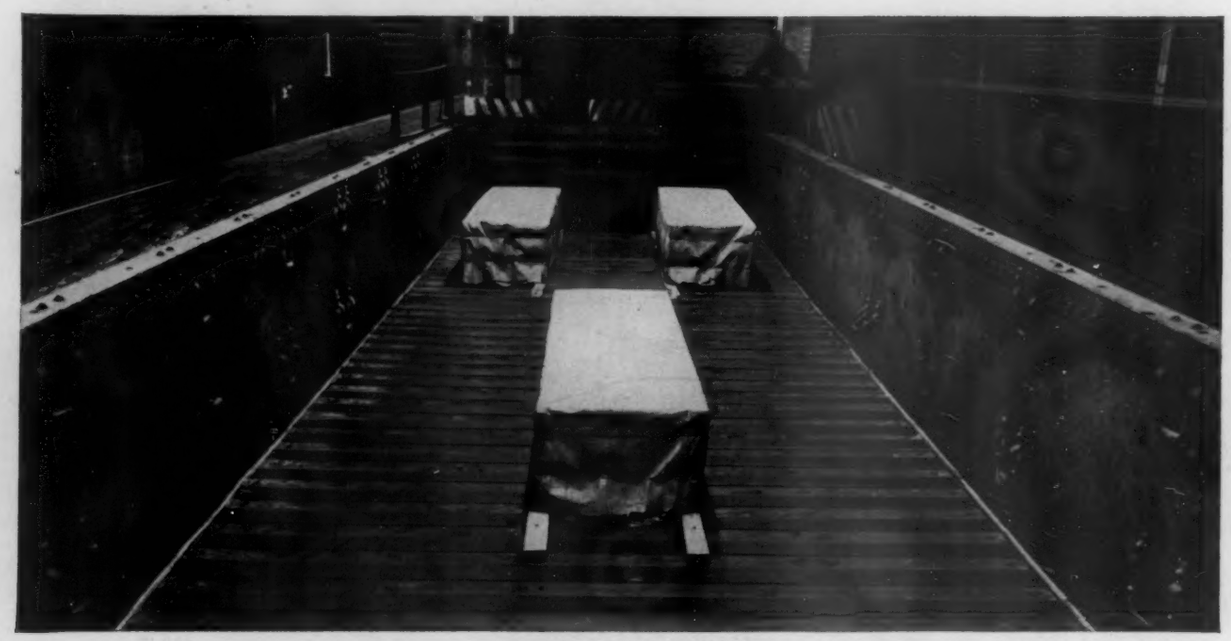
INTERNATIONAL STEEL COMPANY

Railway Division • Evansville 7, Indiana

Underframes • House car sides • Side and end Ladders, Stainless steel flooring, bulkheads and fixtures for refrigerator cars

New freight car flooring

stronger, more durable, economical



Armco Freight Car Flooring has replaced a worn-out wood plank floor in this gondola car. Note that the steel ribs protect the wood components from splintering and tearing.

For years railroads have wanted a flooring for gondola cars, boxcars and flatcars that would provide great strength, long life, nailability, and adaptability to almost every type of lading. Armco Freight Car Flooring is the answer.

This composite flooring consists of hat-section steel ribs and wood planks laid alternately across the width of the car. The wood planks are supported by the rib flanges. Installation is simple and easy.

The steel ribs provide far greater strength than ordinary wood plank floors. This means there is much less danger of break-throughs, particularly under excessive concentrated loads.

There are other reasons why you can expect long life and lower maintenance costs from Armco Freight Car Flooring. It effectively resists abrasion and splintering by loads and loading equipment. It is far more rigid than a wood plank floor and helps resist twisting and racking.

Armco Freight Car Flooring will readily handle almost every kind of lading. Since this feature reduces switching of empty cars, it is an advantage to both railroads and shippers. So is the fact that damage to lading is considerably decreased.

Easy nailability is another feature. This also will appeal to shippers.

Conservative cost analysis shows that compared to a wood-floored 50-ton gondola, for example, you can expect a saving of more than $670 over the average 25-year life of a car. This is an important over-all economy.

Write today for a copy of the informative booklet, "Armco Freight Car Flooring," and get all the details about this stronger, more durable and money-saving material.

WRITE FOR FREE BOOKLET

50th ANNIVERSARY SPECIAL PURPOSE STEELS

ARMCO STEEL CORPORATION

470 CURTIS STREET, MIDDLETOWN, OHIO, WITH PLANTS AND SALES OFFICES FROM COAST TO COAST • THE ARMCO INTERNATIONAL CORPORATION, WORLD-WIDE

ARMCO

10
SOUTHERN
LINES
PACIFIC
F

Winning Passengers Back to the Rails

with the Southern Pacific "SHASTA DAYLIGHT"

The Southern Pacific is proving that up-to-date equipment, improved scheduling, and competitive merchandising of service is the way to retain and increase passenger revenues.

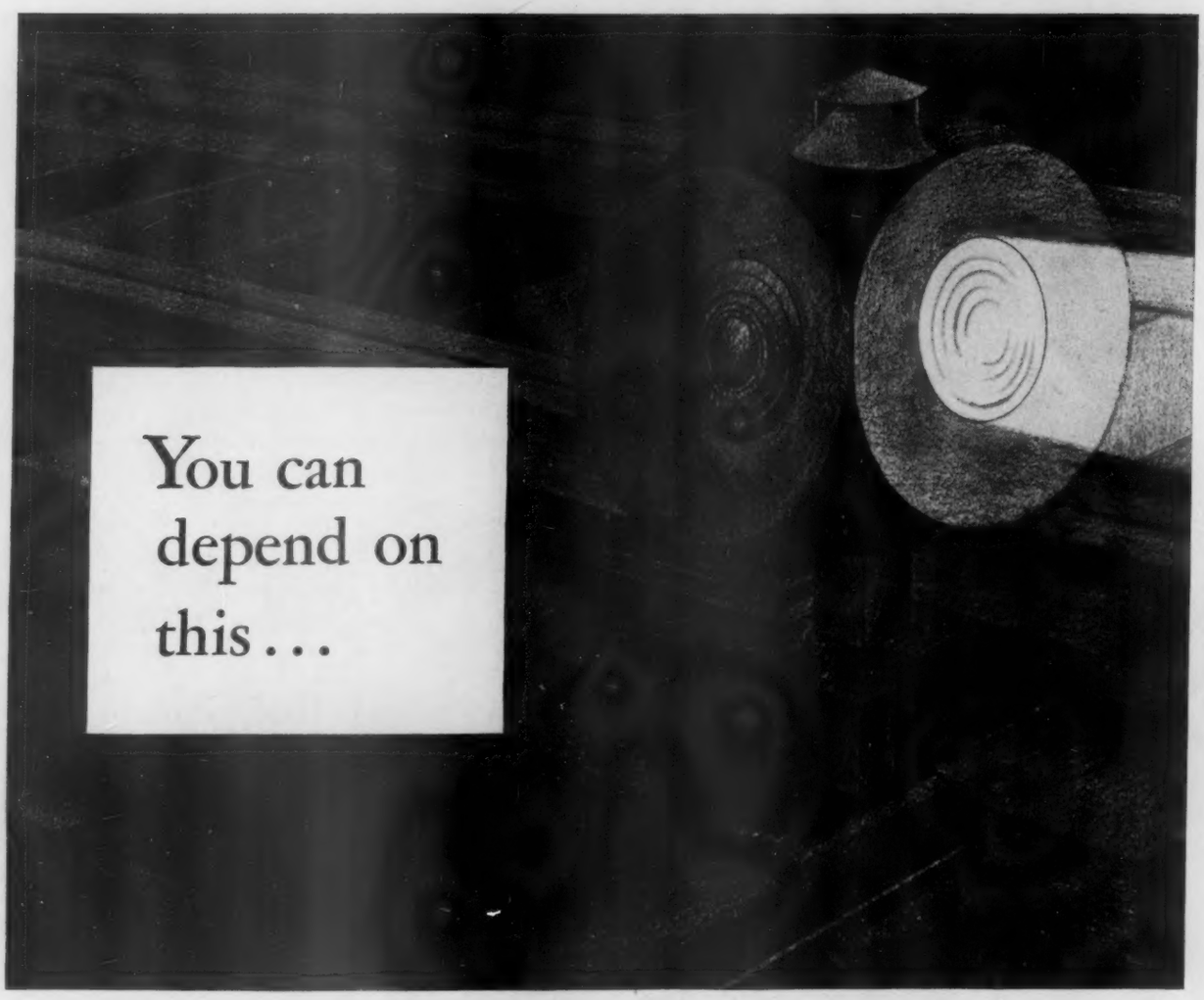
Last year the S. P. invested $5,000,000 in the modern, completely equipped "Shasta Daylights." The two trains, among the best paying trains on the railroad, are expected to gross over $3,000,000 a year.

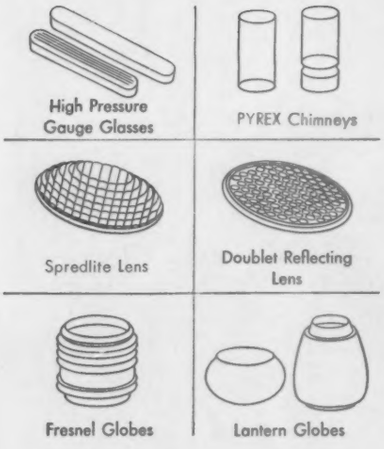
Thus, the Southern Pacific is proving that such modern equipment, hauled by modern locomotives, is one sure way to retain and build passenger business.

Recently, additional Alco-GE passenger locomotives were ordered by the railroad—further substantial proof of their earning power.

AMERICAN LOCOMOTIVE
and
GENERAL ELECTRIC

113-244





At Corning every signal lens is considered a reject until proven otherwise . . . until it meets every A.A.R. specification requirement. Regardless of use each individual piece is given the same careful scrutiny.

Since 1877, Corning has pioneered the development of lens design and color controls. Present standards are based on this work in cooperation with the A.A.R. Signal Section and the U. S. Bureau of Standards.

By specifying Corning products, you get the signalware that established the standards . . . the best signalware available at any time.

Safety depends on signal glassware . . . .
Railroads can depend on Corning

CORNING GLASS WORKS **CORNING, N. Y.**

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Corning means research in Glass

Technical Products Division: Signalware, Laboratory Glassware, Glass Pipe, Gauge Glasses, Lightingware, Optical Glass, Glass Components

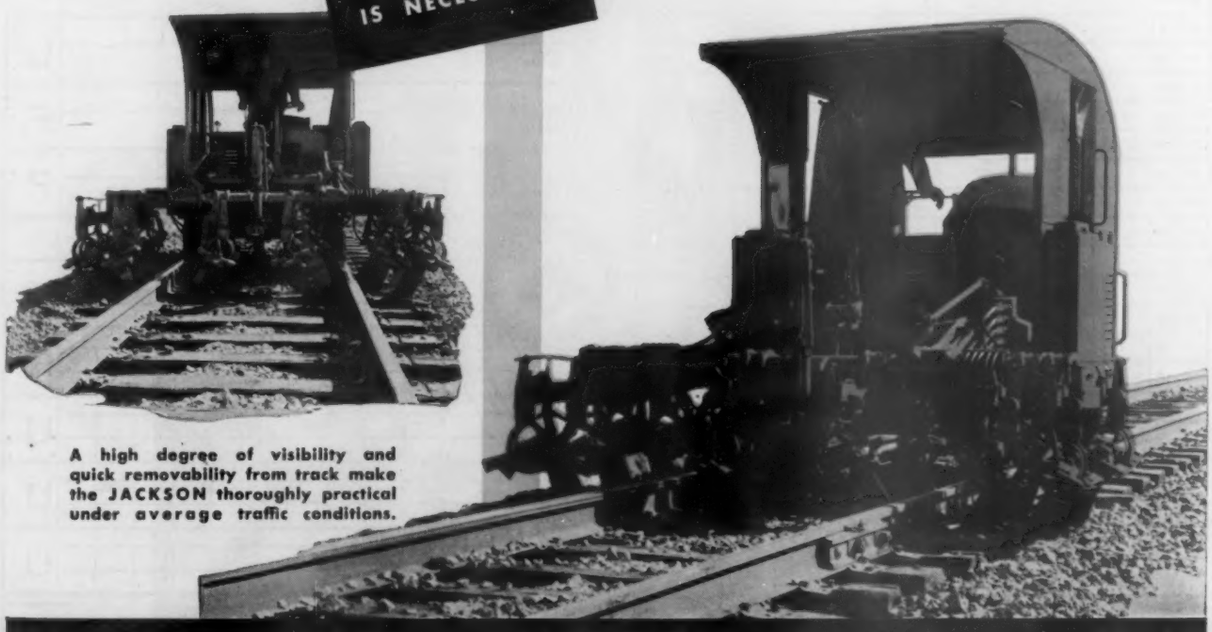
WESTERN PACIFIC R. R. CO.

35th in the SWING to JACKSON MULTIPLE TAMPERS

Upper half of cab may be quickly removed for handling with crane, replaced for weather protection.

In your search for the best means of obtaining better track in the fastest possible time, with the minimum of labor and at the lowest possible cost per mile, remember that already 35 other leading roads and contractors, with the same objective, have carefully investigated, tried, tested and adopted the JACKSON MULTIPLE TAMPER. Many of them are repeat purchasers and now are using from 6 to 25 or more of these units. Doesn't this preponderant swing to the JACKSON MULTIPLE suggest the wisdom of investigating what this machine can do for you before buying any equipment for major ballasting purposes? We would be glad to have one of our thoroughly practical field engineers discuss the matter with you or send you literature and give you the nearest location where you can observe a JACKSON MULTIPLE TAMPER in action. Drop us a line.

IN THE VAST MAJORITY OF CASES NO SPOT-TAMPING OR FOLLOW-UP OF ANY KIND IS NECESSARY.



A high degree of visibility and quick removability from track make the JACKSON thoroughly practical under average traffic conditions.

ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Mich.

Changed Payroll and Statistical Procedures Bring Economies on the L. & N. E.

The disbursement accountant's office of the Lehigh & New England's accounting department has achieved important economies in the handling of its payrolls and the preparation of Interstate Commerce Commission statistics. These cost reductions followed extensive redesign of forms, methods changes, the installation of a National Cash Register payroll machine, and utilization of a Model 1900 Addressograph with automatic feeder and lister. In addition, this new method of handling payrolls has produced other advantages which the road's officers consider equally important, viz:

1. Employees are paid 5 or 6 days closer to the end of the pay period;
2. Payrolls and related statistics which indicate charges to the various classes of work are available to management at earlier dates, making possible personnel or other adjustments before "situations" get out of hand;
3. Supervisors, who no longer have to deal with daily time returns, have more time for other phases of their work;
4. Daily time cards and posting from them are in the disbursement office; and
5. I.C.C. statistics are prepared and submitted to the commission 10 or 12 days before expiration of the period in which they must be filed.

Any payroll system relies, of course, on some basic document, generally the individual or group time return. The L. & N.E. system utilizes individual period time returns prepared in the field from which, after processing, the payroll and pay check are written, I.C.C. wage statistics assembled and distribution produced without reproduction or making any intermediate record. Thus the chances of error are minimized.

The basic time return for the maintenance-of-way department, for example, is the MW-3 form (individual time return) (see Fig. 1), which must be filled out and

Fig. 1

FORM MW-3

JOHN DOE — 175 — 1ST PRD SEP '49
42 SECTION MAN-16 — 5
10 — 1.282
700AM-330PM

DATE		WENT ON DUTY	WENT OFF DUTY	STRAIGHT TIME	OVERTIME PRO RATA	OVERTIME PUNITIVE 1½	OVERTIME PUNITIVE DOUBLE	PD. FOR NOT WORKED PRO RATA	PD. FOR NOT WORKED TIME AND ONE HALF	AUTOMOBILE MILEAGE ETC.	
1	16										
2	17										
3	18										
4	19										
5	20										
6	21										
7	22										
8	23										
9	24										
10	25										
11	26										
12	27										
13	28										
14	29										
15	30										
	31										
TOTAL HOURS											
TOTAL COMPENSATION				M	N		P		R		

VACATION CREDIT DAYS	GROSS PAY	EARNED	VACATION	AUTO MILEAGE ETC.	RAILROAD RETIREMENT TAX	FEDERAL INCOME TAX WITHHELD
	NON CREDITABLE	D	E			
	CREDITABLE	B	C	J	H	G

CORRECT: APPROVED:

FOREMAN SUPERVISOR

MCBEE, ATHENS, O. J69884©

MAINTENANCE OF WAY TIME RETURN
LEHIGH AND NEW ENGLAND RAILROAD COMPANY

Fig. 2

CONTINENTAL CASUALTY INSURANCE — FIRST PERIOD / SECOND PERIOD	T
AETNA LIFE INSURANCE – S. B. P. — FIRST PERIOD / SECOND PERIOD	S
GROUP LIFE INSURANCE — FIRST PERIOD / SECOND PERIOD	L
HOSPITALIZATION — FIRST PERIOD / SECOND PERIOD	F
U.S. SAVINGS BONDS — FIRST PERIOD / SECOND PERIOD	P
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.	
L. N. C. Co. – COAL — FIRST PERIOD / SECOND PERIOD	N
COMPANY PROPERTY — FIRST PERIOD / SECOND PERIOD	R
FIRST PERIOD / SECOND PERIOD	U
FIRST PERIOD / SECOND PERIOD	U
FIRST PERIOD / SECOND PERIOD	U

MCBEE, ATHENS, O. J64659© FORM AD-50

FIXED AND VARIABLE PAYROLL DEDUCTIONS
LEHIGH AND NEW ENGLAND RAILROAD COMPANY

in the hands of the disbursement accountant two days after the end of the pay period. Then, the number of hours, straight time and overtime, worked by each man, and time paid for and not worked is multiplied—by calculators—by the wage rate of the employee, in order to determine the gross pay and at the same time produce all essential information for the later assembly of I.C.C. wage statistics. The gross pay, separated between creditable and non-creditable earnings and vacation allowances, and vacation credit days are entered on the individual time return, along with such variable deductions (i.e., items whose amount depends on gross pay) as railroad retirement and federal withholding tax.

Next, a control tape is run—using the payroll machine—on which are entered gross pay and the variable deductions of each employee. (All these items are entered on the same tape. The N.C.R. machine can carry up to 40 different totals and print them on one tape). When all entries for section forces, for example, have been run, totalizer keys on the machine are depressed and separate totals of gross pay, railroad retirement tax and federal withholding tax are printed on the tape. These, with the total of fixed deductions predetermined, establish the payroll control proof. Each man's fixed deductions are entered on a separate card (AD-55; see Fig. 2). With the time card and fixed deduction card in his possession, the machine operator is ready to make out, simultaneously, the payroll and check and fill in pertinent data on the employee's earnings record (see Fig. 3).

Before the operator commences the work just outlined, correlated payroll and fixed deduction cards are placed in hoppers (A and B respectively) of the payroll machine (see Fig. 4). He then enters in the machine the information from the various cards, with "pick-up" total of earnings to date, federal income tax to date and vacation credit days to date going in first (from employee's earnings record). Then the employee's earnings record card is placed in the machine in the position marked "F." After all information is set up in the machine, the "net pay" key is struck and the amount the worker will take home automatically is entered on the check, stub and payroll sheet and new to-date earnings, federal income tax and vacation credit days automatically entered on check stub and earnings record card.

After all employees' cards in the payroll group have

Fig. 3

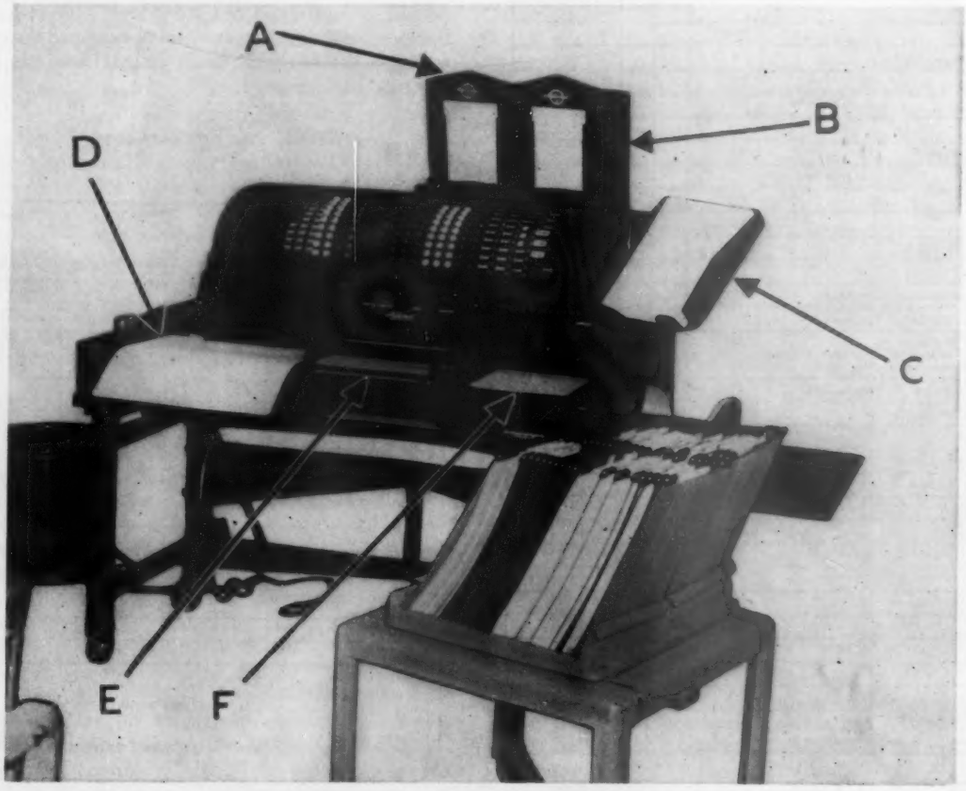
JOHN DOE 10A
57 FREIGHT CARMAN B
11C ARL 1.654
700AM-330PM

										DEDUCTIONS			
1	10.00				10.00			8.20	9.39			15.30	$ 134.25
	10.00								1.60			15.30	▼ 134.25
2	11.00	143.75	20.05		10.00				8.82		4.00	15.30	$ 149.80
	21.00					3.75						31.20	▼ 320.05
3	10.00	148.50			10.00			8.20	8.91			18.10	$ 148.50
	31.00											45.30	▼ 466.55
4	5.00	75.40			10.00				9.09		4.00	15.30	$ 158.30
	36.00	76.10	6.80			3.75						60.60	▼ 626.85
5													
6													
7													
8													
20													
21													
22													
23													
24													
25													
26													
27													

EMPLOYEE EARNINGS RECORD

LEHIGH AND NEW ENGLAND RAILROAD COMPANY

Fig. 4



been handled, the machine automatically prints totals for each payroll column, after all pertinent keys are depressed, of course. These figures should balance to the control proof.

In the allocation of labor to the proper I.C.C. accounts, again using m.-of-w. department section forces as an example, the payroll machine is not used. Foremen report such work daily on MW-19 (see Fig. 5) or MW-20 forms (the latter for Authority for Expenditure work or work done for outside concerns). When received in the office of the disbursement accountant, these forms are audited to see that the total of straight time hours worked equals the sum of the hours assigned to each of the several classifications of work. (Overtime hours are, of course, equated to straight time hours.) Next, the number of hours of work applicable to each account is entered in the right-hand column of the MW-19.

When this work is completed, MW-19's for all section forces are peg-boarded, daily, in a manner that leaves exposed only the right-hand column. Individual section totals for each account are cross-footed and system totals to appropriate accounts posted on a summary MW-19. The process is repeated daily with the addition of the previous days' summary. MW-20's are similarly handled except that in the right-hand column is placed the amount of money spent in A.F.E. work or for outside parties (e.g., building a private siding) to produce a breakdown of hours and money expended on this work.

After the payroll has been completed, the number of hours worked on A.F.E.'s or for outside parties is deducted from the total hours worked, as is compensation for other than maintenance work from total earnings of the payroll group. The remaining compensation is divided by the remaining hours to get an average hourly rate for the employee group. This figure then is multiplied by the number of hours of work applied to each I.C.C. account to obtain the distribution of monies to those accounts.

Distribution of time for equipment maintenance and station and office groups is similarly assembled by peg-board from entries made by the employee in the field.

Preparation of I.C.C. wage statistics forms "A" and "B" is also facilitated by the payroll machine. Simultaneously a simple tape listing is made, for each employee group, of hours and money chargeable to the several classes of time paid for.

When the last pay check is written for the year, the operator can immediately begin entering on Bureau of Internal Revenue Form W-2 year-to-date earnings and federal income tax withheld, using individual earnings record cards. The machine simultaneously produces tape listing required by the Bureau of Internal Revenue. The total of such listing must agree with the to-date earnings and tax on final payroll control proof for the year. Similarly annual reporting of creditable earnings to the Railroad Retirement Board is prepared on the machine and balanced to the final control proof.

Recording purchases of government bonds is another job which the machine does. In this process the machine first records the "pick-up balance" (i.e., the amount which is being held for the individual by the railroad, but as yet unapplied to the purchase of bonds) (see Fig. 6), then the new deduction. If this is enough to purchase the bond, the purchase price is put in the proper column and any "left over" goes into the "new balance" column. Such entries are made simultaneously on both the savings bonds journal and the individual's savings bond record.

Fig. 5

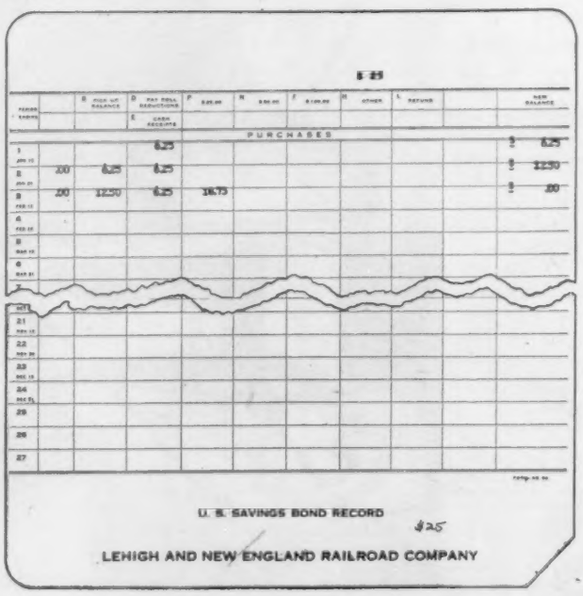
LEHIGH AND NEW ENGLAND RAILROAD COMPANY
Maintenance of Way Department—Track Section
DAILY REPORT OF WORK DONE

DATE _____ LOCATION _____ SECTION No. _____

KIND OF WORK DONE (WORK ON AFE'S AND FOR OUTSIDE PARTIES MUST BE REPORTED ON FORM MW-20)		HOURS WORKED Straight Time	Time & One Half	Double Time	FOR USE OF ACCOUNTING DEPARTMENT	
A.F.E. Work [Detail on Form MW-20]	727.9				727.9	
Work for Outside Parties [Detail on Form MW-20]	718				718	
Patrolling and Inspecting Track	202				202	
Cleaning and Mowing	202				206	
Ditching and Draining	202				208	
Cleaning Culverts	208				218	
Unloading and Distributing Ballast	218				220	
Applying Ballast	220				221	
Laying Rail	220				269	
Laying Ties	220				270	
Laying Other Track Material	220				271	
Handling and Distributing Rail and Other Track Material	220				272	
Gauging	220				273	
Spiking	220				277	
Tightening Bolts	220				281	
Lining and Surfacing	220					
Repairs to Track account Wreck or Derailment	220				373	
Repairing and Rebuilding Right of Way Fences	221				376	
Repairing Roadway Machines	269				379	
Repairing and Sharpening Track Tools	271				402	
Removing Snow and Ice from Track and Roadway	272				404	
Repairing Public Crossings	273				415	
Repairing Private Crossings	281				416	
Cleaning and Filling Lamps—Yard	379				417	
Cleaning and Filling Lamps—Road	404					
Other Work [Describe]						

Correct _____ Foreman | Approved _____ Supervisor | Number of Men Working | TOTAL HOURS WORKED

Fig. 6



Safety Section Works Toward 15 Per Cent Cut in Accident Rate

The fact that you are safer on a train than on the streets, the sidewalks, or even your own home, is not just happenstance, J. H. Aydelott, vice-president, Operations and Maintenance Department, Association of American Railroads, told the association's Safety Section at its thirtieth annual meeting at Denver, Colo., on June 22, 23 and 24. He credited this outstanding performance as "directly related to the railroads' continuing safety efforts." He commended the safety men for their accomplishments, and their 1950 goal for a 15 per cent reduction below the record low accident rate in 1949. He praised the manufacturers and suppliers of railway equipment for their interest in safety and their willingness to cooperate in design changes which enhance safety.

Robert S. Henry, vice-president, Public Relations Department, A.A.R., praised the safety men for their "bold adventure" in attempting to better the 1949 all-time safety record, which was itself "the result of nearly 40 years of intensive effort." Col. Henry stated that any "myth of railroad resistance to safety is like the myth that all railroads were built with land grants—where, in fact, eight per cent of the mileage was built on land provided for a traffic-trade agreement." The railroad safety men started a great public movement for safety. A safety man has to be "a sort of educator, engineer, and evangelist, and an economist as well," he said. Relating economies to safety, he pointed out that $17 billion has been spent on improvements since the Safety Section was formed 30 years ago, scarcely a dollar of which has not contributed to safety in some measure. In the four years since the war, however, the speaker continued, the railroads have earned only 3⅓ per cent on the capital invested in them, which makes it increasingly difficult to carry on improvements contributing to safety.

A. E. Perlman, general manager of the Denver & Rio Grande Western, related the safety record of private-enterprise railroads to those of government-operated railroads in other parts of the world. Good physical properties and efficient operation of the American railroads contribute importantly to the favorable safety factor, he stated. You can judge the safety performance of a man, or a gang, by the unit's efficiency record, Mr. Perlman said in relating efficiency and safety.

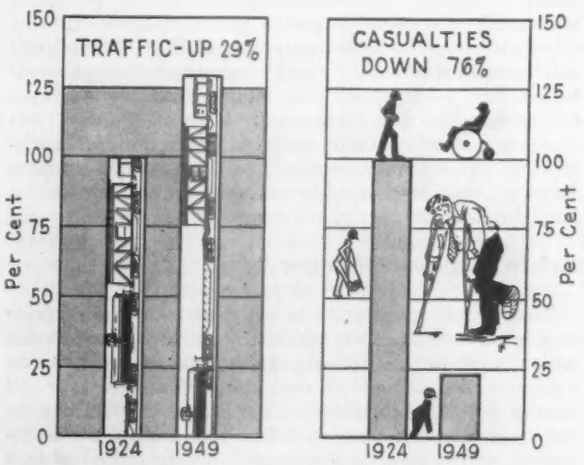
Saved! 4,616 Lives

T. H. Carrow, superintendent of safety of the Pennsylvania, summing up safety progress over the past quarter century, presented figures which indicated that had the 1949 safety performance obtained in 1924—a year which he called "the stone age of safety"—there would have been 4,161 lives saved, and 78,301 injuries prevented. Fatalities to passengers would have been 76 less, and to employees 523 less. The other savings in lives would have affected trespassers and casualties at highway grade crossings. Assuming the role of prophet, Mr. Carrow predicted for 1954 that the frequency of casualties to passengers on trains would be as good or somewhat better than the record for 1949, but qualified this prediction on account of the present very low

J. P. Wadsworth (left), general safety supervisor, Canadian National—newly elected chairman of the Safety Section of the Association of American Railroads—examines the safety record established in 1949 with D. W. Naff (center), retiring section chairman, superintendent of safety, Norfolk & Western, and Safety Section Secretary H. S. Dewhurst at the organization's meeting at Denver

frequency of serious accidents and the effect that a single accident could have. A reduction of casualties to persons at grade crossings, which accounted for 44 per cent of all railroad fatalities in 1949, is not indicated, Mr. Carrow said, in view of the "increasing numbers of cars and trailers in the hands of reckless or inexperienced drivers . . . . and the limited preventative action the railroads are able to take." Mr. Carrow foresaw a possible 20 per cent improvement in the employee casualty rate, down to 5.5 per million man-hours in 1954, compared to the 1949 rate of 7.04.

Drawing on exhaustive studies, Mr. Carrow stated



Using 1924 as 100, T. H. Carrow, superintendent of safety, Pennsylvania, showed how casualties had declined 76 per cent while traffic had increased 29 per cent in the quarter century ending in 1949

that he is "convinced that one of the major tasks the railroads should undertake is a reduction in minor train accidents, euphemistically called 'heavy impacts' and 'rough handling.' 'There is gold in them thar hills' from the standpoint of preventing damage to equipment, to freight, and the cost of 'clearing wrecks,' and an important by-product of improving this feature of operation would be a sizeable reduction in casualties to employees," Mr. Carrow said.

Management has the responsibility of furnishing the employees with the very best facilities and equipment with which to work, H. E. Shumway, general manager of the Union Pacific, said, and the employees, in turn, have the responsibility of using the facilities and equipment in accordance with the safety rules provided therefor. Mr. Shumway felt that top-ranking officers must indicate their sincere interest in the safety movement.

W. H. S. Stevens, director of the Bureau of Transport Economics and Statistics, Interstate Commerce Commission, made a plea for greater uniformity in reporting accidents, and standardization of the work that goes into the preparation of the reports.

R. P. Hamilton, superintendent of safety of the St. Louis-San Francisco, and chairman of the railroad section of the National Safety Council, declared that safety records, *per se*, are no objective. The safety effort is a humanitarian effort comparable to the Red Cross, he said, motivated by much more than claim prevention. D. E. Mumford, superintendent of safety of the New York Central, and chairman of the 1950 railroad safety campaign, described the success of regional one-day meetings held at different cities, and attended voluntarily by groups of more than 400.

C. L. LaFountaine, general safety supervisor of the Great Northern, presented the report of the committee on train accidents, of which he was chairman, urging that the safety men seek means to cut collisions and derailments, responsible for 84 deaths and 1,078 injuries in 1949. The committee felt that, because the composite increase in the cost of material and wages that has occurred during the war and since had increased so much more than the limitation of reportable train accidents ($250), there was some unfavorable distortion in the total number of such incidents.

J. R. Tenney, superintendent of safety of the Western Maryland, chairman of the committee on train-service accidents, reported that employees killed in train-service accidents in 1949 numbered 24.5 per cent less than in 1948, and employees injured were down 27 per cent, which the committee reported as indicative of the effectiveness of the safety programs of the 1950 railroad safety campaign. Mr. Tenney reported the progress which had been made with the Geared Hand Brake Committee of the Mechanical Division toward the maximum standardization of hand brake design. In discussion following the report, there was strong support favoring specification of a non-spin feature for power hand brakes.

Safety Programs Effective

The biggest opportunity to cut reportable train-service accidents, one member declared, is to enforce rules which prohibit unnecessary getting on or off moving equipment—a source of casualties responsible for 19 deaths and 2,791 injuries in 1949. Eye injuries can be cut if goggles are furnished free where their use is required, and if prescription goggles are furnished at cost less the price of the ordinary goggles where correction is needed, the representatives of two roads reported.

O. J. Robinson, master mechanic of the Union Pacific, citing many personal incidents from his practical experience, pointed out the importance of safety efforts in the maintenance-of-equipment department. The great progress since the first real safety efforts were begun in 1912 demonstrate, he declared, the effectiveness of safety programs. "No job is too important—no service too urgent," he said, "that time cannot be taken to work safely."

C. T. Hightower, assistant to the assistant general manager, D. & R.G.W., stressed the importance of proper selection of new employees. Maintenance-of-way workers, often widely distributed, can be reached through the use of movie cars, he said, and forces can best be persuaded to use safety shoes through personal contact. The Rio Grande has cut down accidents caused by faulty tools by inspecting them with magnetic particle detectors.

G. C. Stromsoe, superintendent of the safety of the Atlantic Coast Line, reported for the committee on non-train accidents that 46.9 per cent of the total casualties to employees on duty occurred in accidents in this category, indicating the need for greater efforts to bring about reductions. The committee reported that while there had been a general improvement last year, there was an adverse showing in the percentage of total fatalities and injuries occurring through accidents produced by shop machinery, stationary engines and motors, and cranes. Suggested preventative measures included proper instructions to operators and follow-ups to assure compliance; assurance that guards are in place prior to operation of machines; and enforcement of prohibition against oiling, making repairs to, or wearing loose garments when working close to moving machines.

C. M. Kimball, chairman of the committee on prevention of highway crossing accidents, reported a reduction of 11.1 per cent in the number of accidents in 1949 as compared with 1948, and a reduction of 6.5 per cent in fatalities and 11.3 per cent in injuries for the same comparative period. "While this reduction may appear small," the committee reported, "a more favorable situation than the figures indicate actually exists due to the fact that the accomplishments were made in the face of continuing increases in motor vehicle registrations as well as in the amount of gasoline consumed per motor vehicle."

Increased activity by state officials in carrying out the safety movement of the President's Highway Safety Conference, the holding of state conferences, and the organization of new public support groups during the recent past, the committee stated, afford an excellent opportunity for integrating rail-highway intersection accident prevention activities into state and local traffic safety programs. The committee reported that it has joined with the Highway-Railroad Crossing Committee of the National Safety Council in producing a "Signs of Life promotional kit for railroad safety officers," designed to impress motorists with the need for obeying highway traffic signs, including those at grade crossings. These kits have been distributed to chief safety officers and to railroad operating and public relations officers.

The report showed that the number of grade crossing accidents and the fatalities and injuries resulting therefrom have been generally on the decline since 1946. The number of accidents in 1949 totaled 3,523; the fatalities numbered 1,507 and the injuries 3,774.

Mr. Hamilton, chairman of the committee on trespassing, reported that 1,218 trespassers had been killed by railway operations in the year 1949, the lowest figure during the past 10 years, but there was, however, an increase of 16.9 per cent in the number of fatalities occurring in the age group under 14 years. The committee praised the efforts of a number of railroads, conducting safety meetings at schools as part of an educational effort "to combat the needless wasting of human lives."

The traction motors on the 4,000-hp. New Haven Diesel-electric locomotives operate with sealed grease bearings

SIGNIFICANT PROGRESS IN LUBRICATION

Traction motors now run from shopping to shopping with sealed armature bearings packed with high-temperature grease

By R. A. HUTCHINS
Motor Engineering Division
General Electric Company
Erie, Pa.

The modern Diesel-electric locomotive is a complete power plant made up of a number of carefully engineered pieces of apparatus. Thousands of hours of developmental work have gone into these various components. The truck-mounted traction motor is one of these units that presented difficult problems in its development. Suspended between the driving axles and the truck bolster, this motor is subject to a severe degree of road shock, especially when the locomotive is operating at the high speeds prevalent in modern railroading.

The design of a suitable motor to operate within such strict space limitations requires the use of engineering constants that are not encountered in any other type of equipment. These same limitations restrict access to the motor for maintenance purposes. This makes it desirable to eliminate, if possible, the addition of any lubricant to the armature bearings while the motors are in the trucks.

Within the confines of this restricted space, engineering progress has achieved a greatly increased motor output. A large part of this added output has come as a result of changing from sleeve-type bearings to cylindrical roller bearings on the armature shaft. The adoption of roller bearings was accompanied by numerous failures in service, a large percentage of which were due to improper lubrication. However, steady progress has been made in roller bearing manufacture and lubrication. The bearing companies, the motor manufacturers, the lubricant manufacturers, and the railroads have cooperated in working towards the elimination of bearing failures in service.

An important decision facing the designer has been whether to lubricate the bearing with oil or grease. Oil would naturally be chosen unless its limitations had been learned by experience. The reason for such a choice is found in the fact that the amount of oil in a bearing can be easily checked, whereas this is not the case when grease is used.

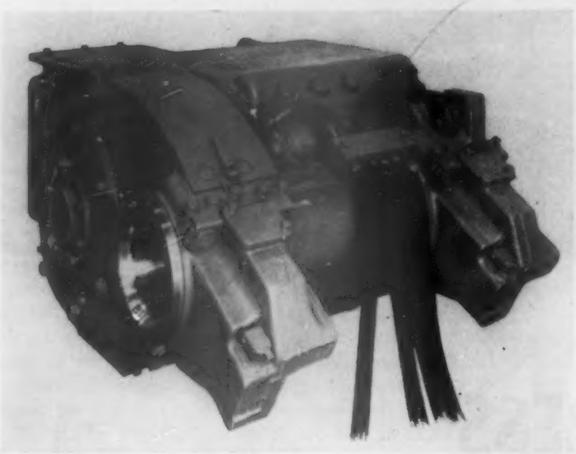
In 1931, and again in 1933, the General Electric Company furnished traction motors having oil-lubricated roller bearings for armatures. They were used on gas-electric and Diesel-electric locomotives. Operation was not satisfactory, for in time bearing failures occurred due to loss of oil by leakage past the gaskets or by foaming or misting. As a result of these difficulties, a change was made from oil to grease.

The successful use of grease to lubricate bearings in truck-mounted motors is not a difficult problem, with proper design of bearing housings, seals, and the selection of a grease that meets the service requirements.

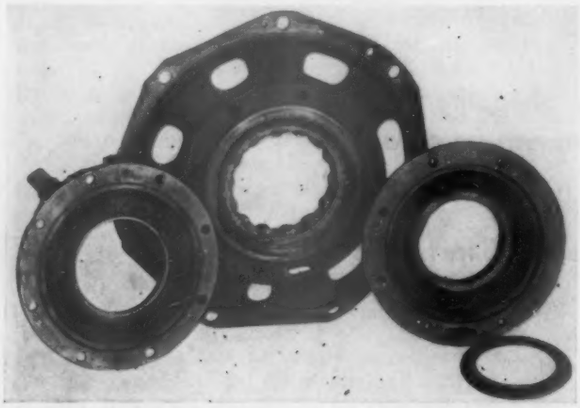
For the past fifteen years, the New York, New Haven & Hartford has operated most successfully, between New York and New Haven, Conn., a fleet of electric locomotives having sealed roller-type armature bearings. The bearings and bearing caps of these motors are packed with grease at the time of assembly and no grease pipes or grease fittings are provided. The motors operate over a period of three to four years and accumulate 200,000 to 300,000 miles between overhauls, without the addition of grease. At the time of overhaul, the bearings are carefully inspected and returned to service, unless found unsatisfactory. The grease used gives up just enough oil to well lubricate the raceways and bronze retainers. Oxidation is at a low rate and analyses of the grease, even after 425,000 miles of operation, have shown low acidity, satisfactory penetration and sufficient oil content.

In 1942, the same railroad started to operate its freight and passenger trains between New Haven and Boston, Mass., with Diesel-electric locomotives. These locomotives were equipped with traction motors geared for a top speed of 80 m.p.h. At this speed, the armature rotates at 2,280 r.p.m.

It was soon found that bearing temperatures in this



Truck-mounted traction motor with sealed grease lubrication



Excellent condition of traction-motor bearing and lubricant after 254,000 miles of service

operation were much higher than on the electrified zone. Readings taken by thermocouples while hauling the "Yankee Clipper," between Boston and New Haven, showed values corresponding to those obtained on Diesel-electric passenger runs on railroads between Chicago and Los Angeles. The comparatively high pinion-end bearing temperatures encountered are due to the high-temperature motor cooling air which is taken from the cab and to a transfer of heat from the gearing and also from the motor windings.

Experiments Begun in 1944

Based on these observations, greasing was scheduled for 6,000-mile periods for the pinion end, and 30,000-mile periods for the commutator end. Less frequent lubrication of the pinion end would have been hazardous with the grease then in use.

P. H. Hatch, general mechanical superintendent of the New Haven, early recognized the need for keeping records and analyzing the case of each bearing removed from service, either because of failure or wear. He established a lubrication and bearing committee to make recommendations on this subject. One of the tasks assigned to this committee was to find a lubricant for Diesel-electric locomotive service which could be sealed in the bearing and operated between overhauls without attention.

This project was somewhat simplified by the fact that the General Electric Company had manufactured a large number of electric-drive vehicles for the United States armed forces. In this service, the traction-motor armature bearings operated at high temperatures and required a special grease. After extensive tests on numerous greases, one was found that proved satisfactory.

In October, 1944, the New Haven began using this high-temperature grease in a number of locomotive traction motor armature bearings. The grease fittings on these motors were replaced by pipe plugs so that no lubricant could be added between inspections. Motors were removed from service for inspection of the lubricant and bearings at intervals frequent enough to prevent failures in service. It was finally established that motors having bearings packed with this grease could be put into service and operated for 200,000 to 250,000 miles without further attention to the bearings.

Experience extending over several years has proved this type of grease and lubrication practice to be very satisfactory. As a result, the New Haven, about two years ago, issued maintenance instructions to use this high-temperature lubricant for repacking all armature bearings on G. E. Diesel-electric traction motors. The grease pipes and fittings are being replaced by pipe plugs which are welded in place to prevent the addition of lubricant while the motors are in the trucks.

The maintenance practice followed by the New Haven has practically eliminated bearing failures in service. Whenever motors are removed from the trucks, for wheel turn or other reasons, advantage is taken of the opportunity to have the armature rotated slowly by low-voltage power. One end of a steel rod on the bearing cap and the other end against an experienced ear is as useful in picking out defective bearings as is the stethoscope to the doctor in his work.

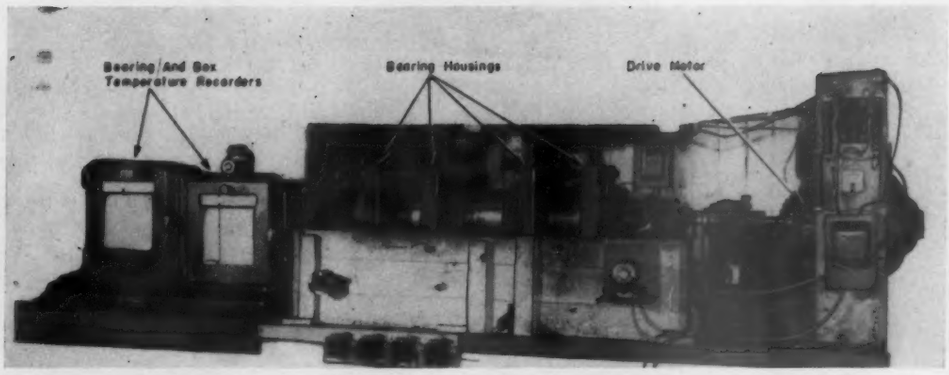
Extreme Temperatures Withstood

The Atchison, Topeka & Santa Fe is another railroad that is operating many traction motors without the application of grease gun or oil can between overhauls — the armature bearings being packed with high-temperature grease and sealed. The service is very severe, especially on the Chicago-Los Angeles run. High speeds are maintained for long distances. Extremes in temperature are encountered in the mountains and the deserts. Traction motors encased in ice and snow on one part of the trip may quickly pass to the other extreme of climate.

Traction motors with grease-sealed armature bearings have operated through both summer and winter conditions. Careful laboratory examination of bearings and grease after 250,000 miles of operation showed both in good condition and satisfactory for many additional miles of service. Results have been so satisfactory that the Santa Fe has issued instructions to change over all these traction motors. This will be done as the motors come in for overhaul. Grease fittings will be replaced with pipe plugs and bearings and bearing caps packed with the high-temperature grease.

These field experiences confirm the results obtained in the G. E. Laboratory at the Erie Works, where many kinds of grease for traction motor use have been given exhaustive tests. These tests are run with the same type of bearing caps, seals and bearings (150 m.m.) as are used on G. E. traction motors in Diesel-electric locomotive service. Bearings on test are run under load, with speeds and temperature simulating actual service conditions.

Tests on the high temperature (D6A2C4) grease have currently passed the 6,000-hour mark and are being continued. They have consistently shown very satisfactory



Equipment for G. E. laboratory tests of traction-motor armature bearing lubrication

results. Thus, the laboratory work confirms the good performance obtained under actual operating conditions as described above.

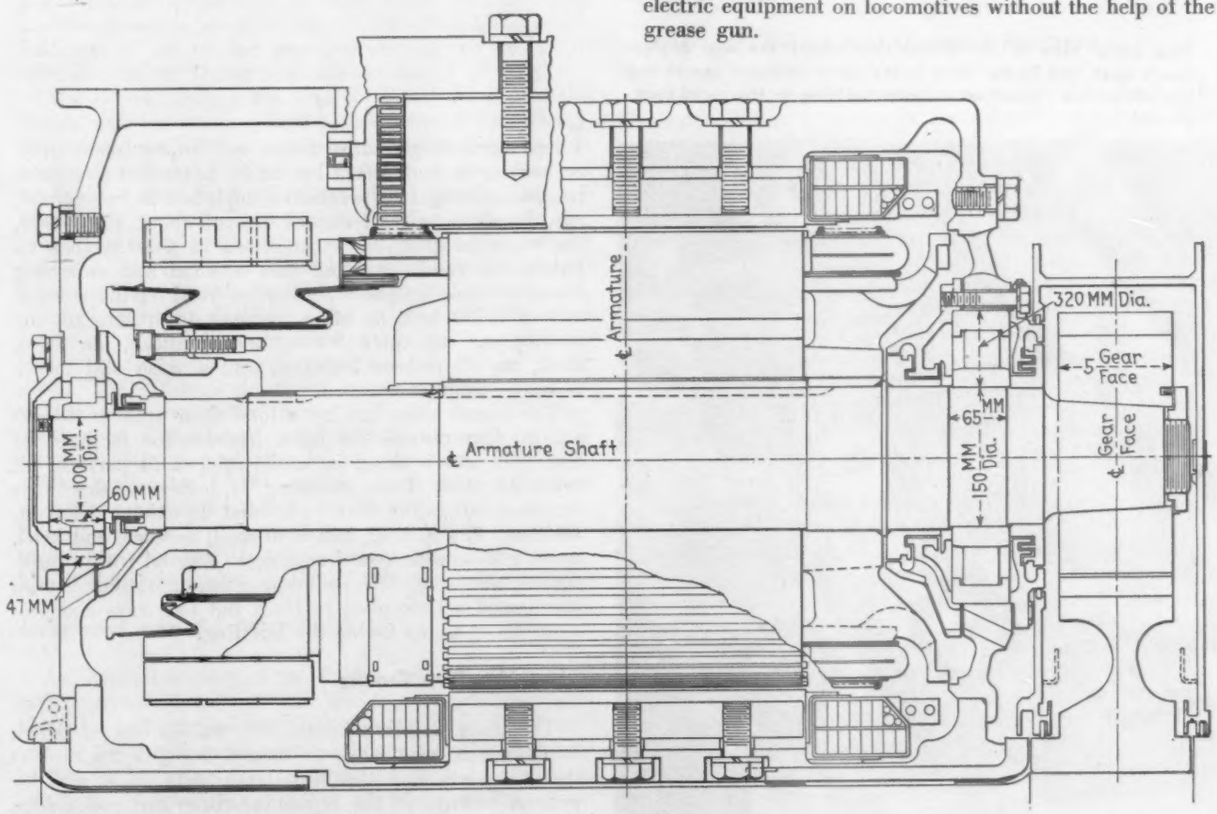
Sealed Armature Bearings

In view of the facts developed by research and field tests, the General Electric Company has standardized on the use of this high-temperature grease in certain G. E. traction motors. To date several thousand have been shipped having sealed armature bearings which are packed with high-temperature grease.

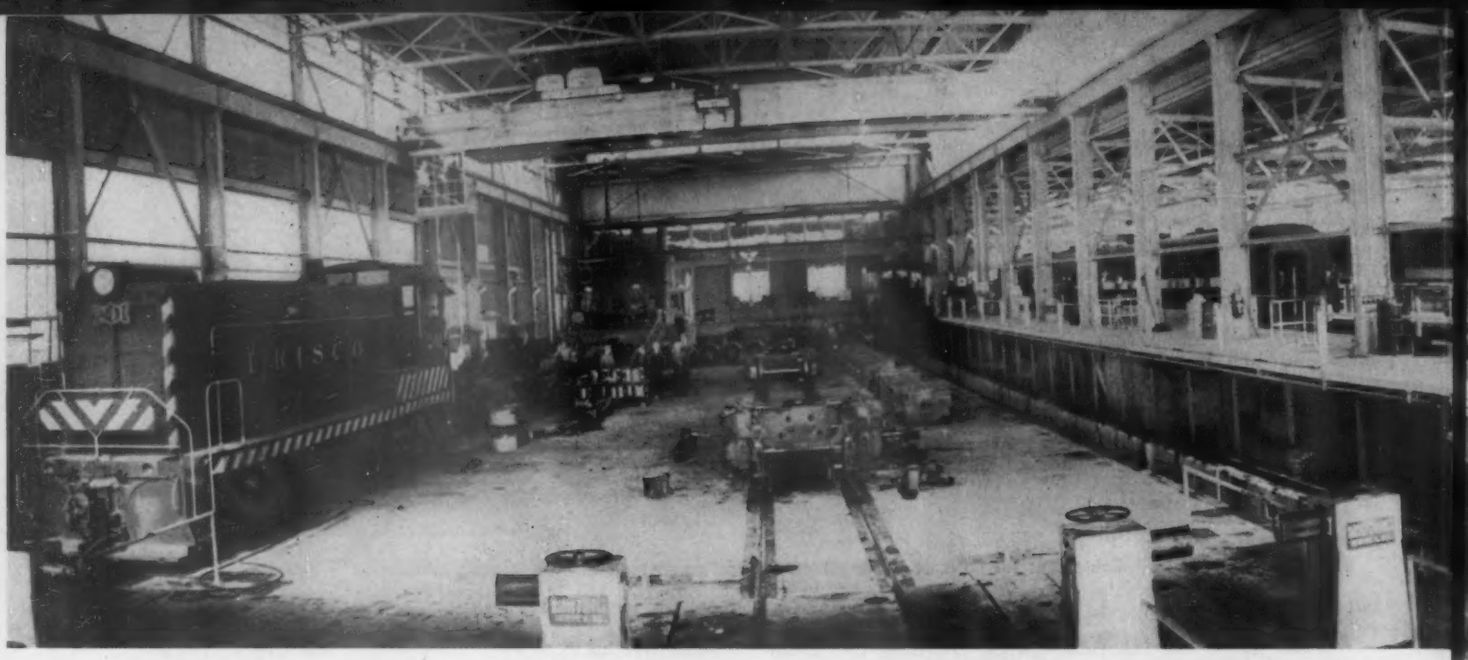
In the past, traction motor armature bearings have represented one of the most difficult of locomotive lubrication problems. The frequent greasings necessary were an unpleasant, hazardous, and time-consuming task. Moreover, as experience showed, dirt was frequently carried into the bearings along with the grease when traction motors were lubricated while in the trucks. This resulted in undue bearing wear and failures in service. The use of high-temperature grease in sealed armature bearings proved to be the solution. By eliminating all lubrication between overhauls, it saves time and expense. The fact that dirt is excluded means longer bearing life and fewer failures in service.

With this problem behind them, G. E. engineers are turning their attention to the many pieces of rotating electric apparatus in the locomotive cab that use either ball or roller bearings. Service tests are being made, using bearings sealed against the addition of lubricant between overhauls.

The evidence accumulating from operating experience with these test units indicating that the day may soon come when it will be possible to operate rotating electric equipment on locomotives without the help of the grease gun.



Longitudinal section of a traction motor using sealed-grease lubrication

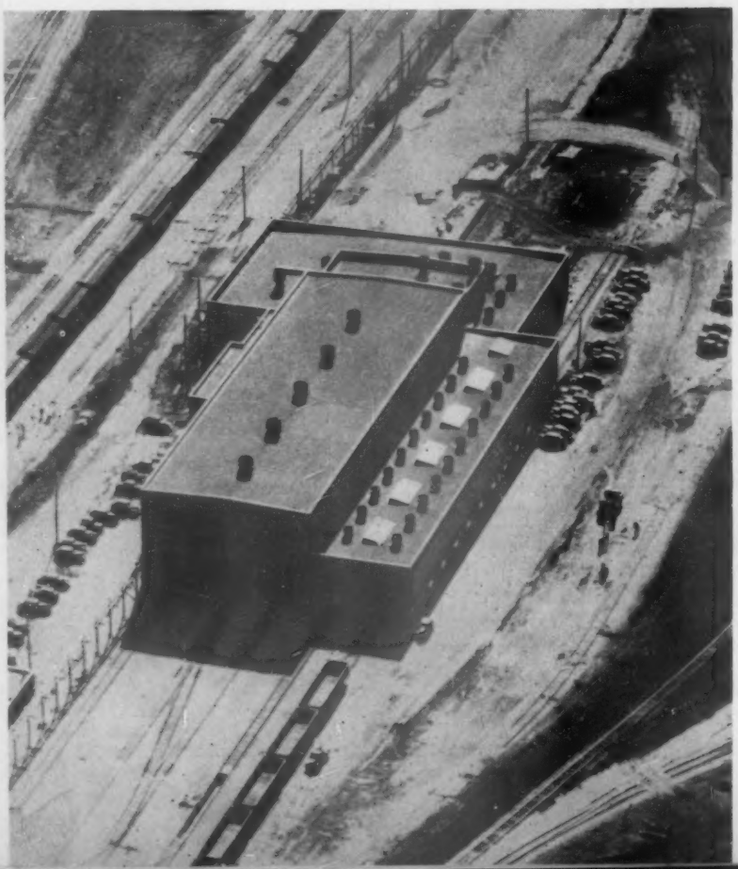


Panoramic view of the shop interior, taken from the entering end for locomotives. The drop pit for removing trucks is in the foreground. At the right are the service tracks, which are flanked by elevated and depressed working levels

Frisco's Largest Improvement Project

Undertaking at Springfield, Mo., costing $5,000,000, involved construction of a Diesel repair shop, a large freight yard, a new division office building, and supporting facilities

This aerial view of the Diesel shop shows the new enginemen's wash and locker room in the lower lefthand corner and the unfinished "lube" oil reclaim building in the right background

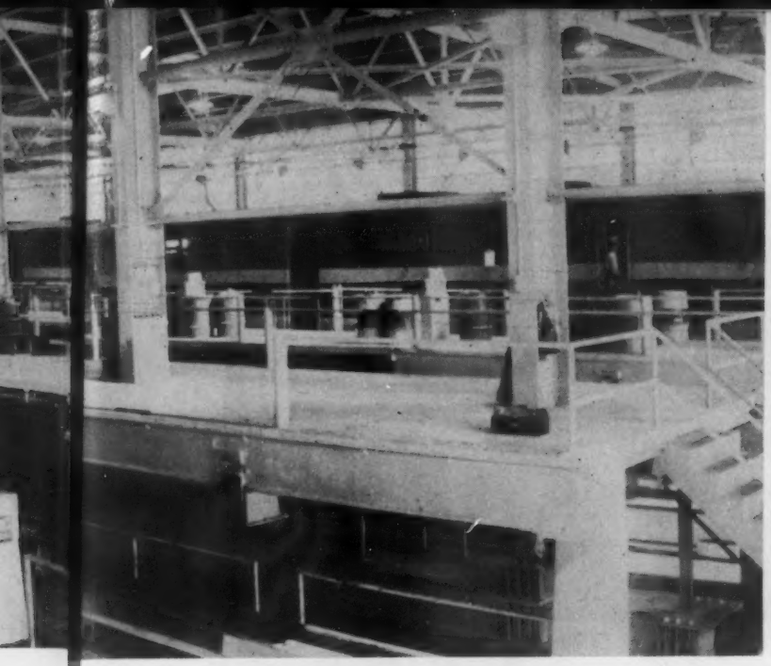


The largest single construction and improvement project ever to be undertaken by the St. Louis-San Francisco has been brought to practical completion at Springfield, Mo. Involving a total expenditure of about $5,000,000, the work included the construction of a large shop to handle the road's growing fleet of road and switching Diesels, a new freight classification yard having a capacity of 2,600 cars, an office building and restaurant for employees, car-repair tracks and facilities, an icing dock, an oil reclaim building, and a wash and locker room for enginemen.

The Diesel shop, having a total floor area of 48,000 sq. ft., incorporates the latest features for facilities of this type and is designed and equipped to perform all types of work, from servicing to heavy repairs. This building, extending in an east-west direction, is 127 ft. wide and 354 ft. long, and is of steel, concrete and brick construction, with a steel roof deck, covered with a built-up asphalt roof. The window areas are glazed with corrugated actinic glass to block out heat rays and prevent sun shadows inside the building.

Shop Has Five Tracks

The main building houses five tracks, one of which is a through track while the others are stub tracks. The through track and the stub track next to it are for general service. Of the remaining three stub-end tracks, one is a truck release track, and two are servicing tracks



for heavy overhaul work. With the exception of the through track, all of the tracks are served by a drop pit 24 ft. wide, 18 ft. deep, and 98 ft. long, in which is installed a 100-ton drop table for removing trucks. Each of these tracks is equipped with body supports for holding up Diesel units when trucks are removed.

A 30-ton overhead crane, with a 5-ton auxiliary crane, operates the entire length of the shop in a 75-ft. crane bay and serves the two heavy-repair tracks and the truck-release track. The through track, which is located on the north side of the building, and the two tracks directly south of it, are built over inspection pits 214 ft. long and 4 ft. deep and are served by adjacent elevated platforms and depressed working areas so that upper and lower engine work can be carried on simultaneously. Lubricating oil, treated water, steam and air are available at both the platform and lower levels.

The Diesel building has four levels. At the end of the longer stub tracks, on a level with the elevated platforms, are located an office, a storeroom, a parts-cleaning and parts-reconditioning shop, an electrician's shop, and an air-brake room. At the basement level are the "heavy" storeroom, water-treating facilities and pumps, and the "lube" oil room in which is stored approximately 69,000 gal. of oil in 10 tanks. About halfway between the shop level and the oil-room floor are a wash-and-locker room, store department facilities, and a part of the shop facilities. A 10-ton freight elevator operates to and from this level to handle heavy parts for use on the upper levels. The different elevations in the building are connected with numerous ramps and stairways. On the south side of the building are two additions housing a large wheel lathe and large lye cleaning vat.

The main part of the building is heated with blast and unit heaters, and the office with convector radiators. Steam and air for the building is supplied from the power plant serving the existing steam locomotive shops. The building is equipped with 32 powered ventilators.

Lubricant and Fuel-Oil Facilities

An unusual feature of the Diesel shop is a communication system involving 22 dial-type telephone sets, placed at strategic points throughout the shop. From any one of these telephones, and with the aid of a number of paging loud-speakers, an employee may quickly contact and converse with another anywhere in the shop. By thus permitting practically immediate communication between any two persons in this shop this system is an important factor in adding to its efficiency.

A two-story, 27-ft. by 40-ft. lubricating-oil reclaim building is being constructed 100 ft. west of the Diesel shop. In the basement of this building will be three settling and used oil-storage tanks, and tanks necessary for blending and refortifying the reclaimed oil. On the second floor it will have a testing laboratory and will house two oil retorts with filters and six tanks for holding reclaimed oil. Pipe lines will extend to the lubricating-oil tanks in the basement of the Diesel shop.

Unloading and Storage Tanks

Approximately 11.4 miles of pipe lines have been installed to supply water, steam and air for the new facilities and to provide an effective fire-protection system. It is planned to install a special fire-protection system of liquid foam in the lubricating-oil room in the basement of the Diesel shop and in the plant for reclaiming oil.

Two 55,000-bbl. Diesel fuel-oil storage tanks were constructed northwest of the Diesel shop, with unloading facilities consisting of two spur tracks on which 10 cars can be spotted for gravity unloading into a 10,900-gal. underground sump tank. From this tank the oil is pumped into the big storage tanks which are set on the same level and cross-connected. Fuel supplied to the Diesel locomotives comes from two 20,000-gal. tanks located along the Diesel shop servicing tracks. Oil for these tanks is pumped directly from the large storage tanks.

Other units in the vicinity of the Diesel shop include sanding facilities consisting of three elevated tanks with a total capacity of 20 tons, which will sand Diesels spotted on any one of three tracks, and a 34-ft. by 80-ft. brick building which houses an engineman's wash- and locker-room.

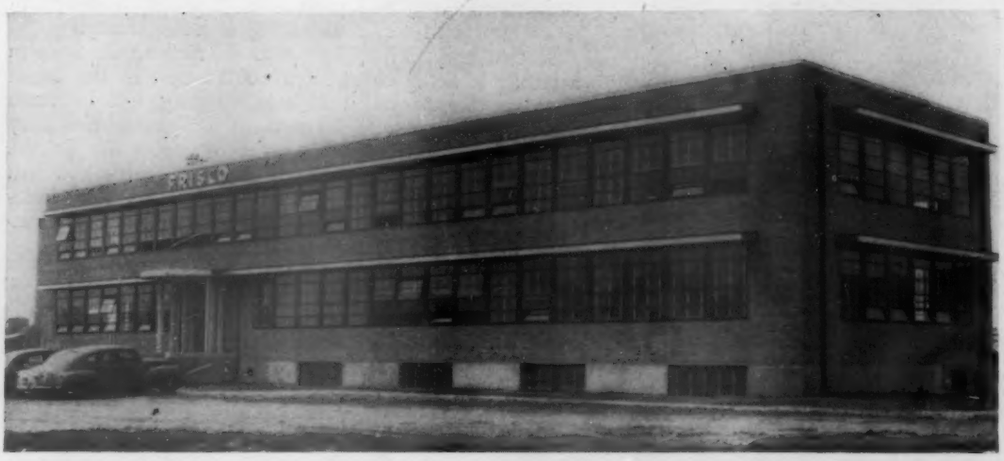
Office Building Has Unusual Features

Another of the major features of the Springfield modernization program is the recently completed West Springfield office building located just south of the new Diesel house. This building houses the offices of the division superintendent, two division engineers, the terminal superintendent and the dispatcher. It has attracted wide attention because of several distinctive features incorporated in it. One is the heating system which is reported to be the first installation of its type in the country. This system is known as perimeter heating, and consists of heating with continuous hot water radiation completely around the building on each floor. A continuous heating cabinet encloses not only the fin-tube radiation, but also all telephone, buzzer, intercommunicating and electrical conduits, so that these conduits are accessible at any point in the building.

Interior Has 62 Colors

All dividing partitions between offices in this building are of a movable type so that at any time the space of a particular office may be enlarged or diminished by moving a partition. No structural changes will be required in such instances, and no changes in heating will be necessary because the heating will be properly proportioned for the space regardless of where the partitions are located. Fluorescent lighting fixtures of the latest design are also located to provide complete flexibility should any change in offices be desired.

The interior decorating scheme is based on the theory of the functional use of color. Each of the four walls of



Features of the new office building include "perimeter" heating, removable partitions between offices and the use of 62 colors on the interior walls

each office is a separate color which was chosen on the basis of the direction the office faces, the function of the office, and the size of the room. Particular attention was given the matter of selecting the color on the wall which is faced by the employees occupying the office to make certain that it would be soft and easy on the eyes. In all, 62 colors were used throughout the building. Several colors were used in the corridors to increase the apparent width and decrease the apparent length.

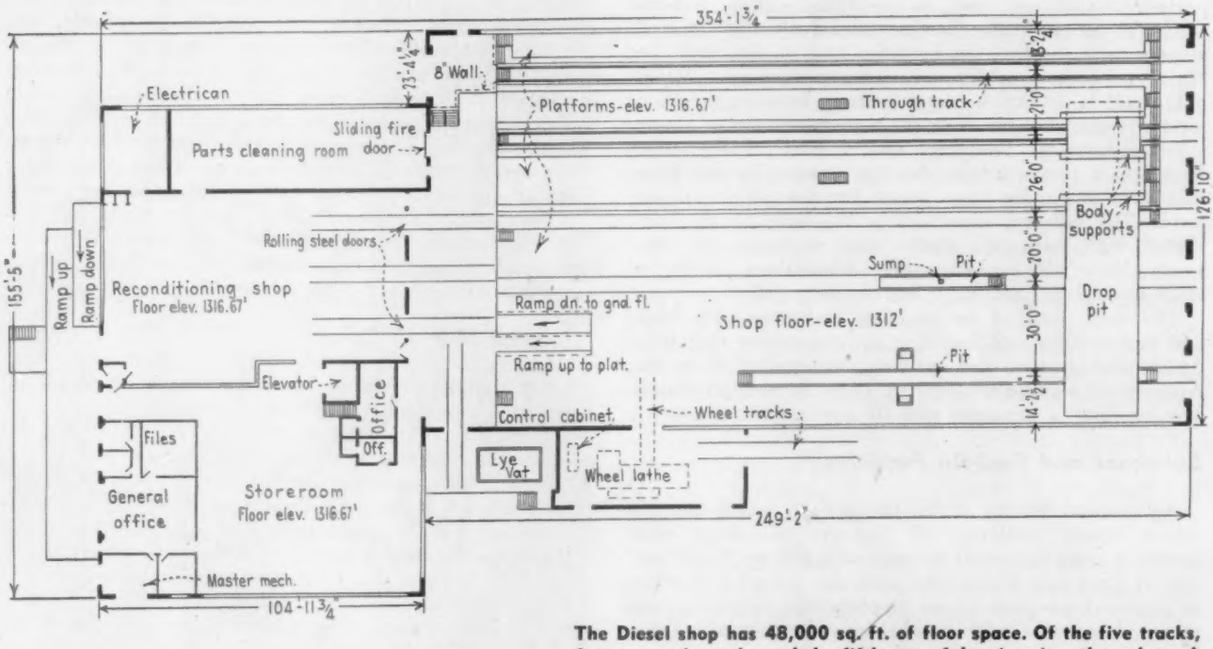
Large window areas were provided in all four walls of the building. Daylight is controlled by venetian blinds and by permanent visors above the windows to shield them from the direct rays of the sun through most of the working hours. The principles of solar heating were applied in the use of these visors.

Another innovation in the design of the building is the utilization of sheet steel mullions between the windows to house the structural columns and all heating, plumbing and electrical piping and conduits extending from the basement to the upper stories of the building. This design permits the piping to be concealed and yet makes it easily accessible for repairs.

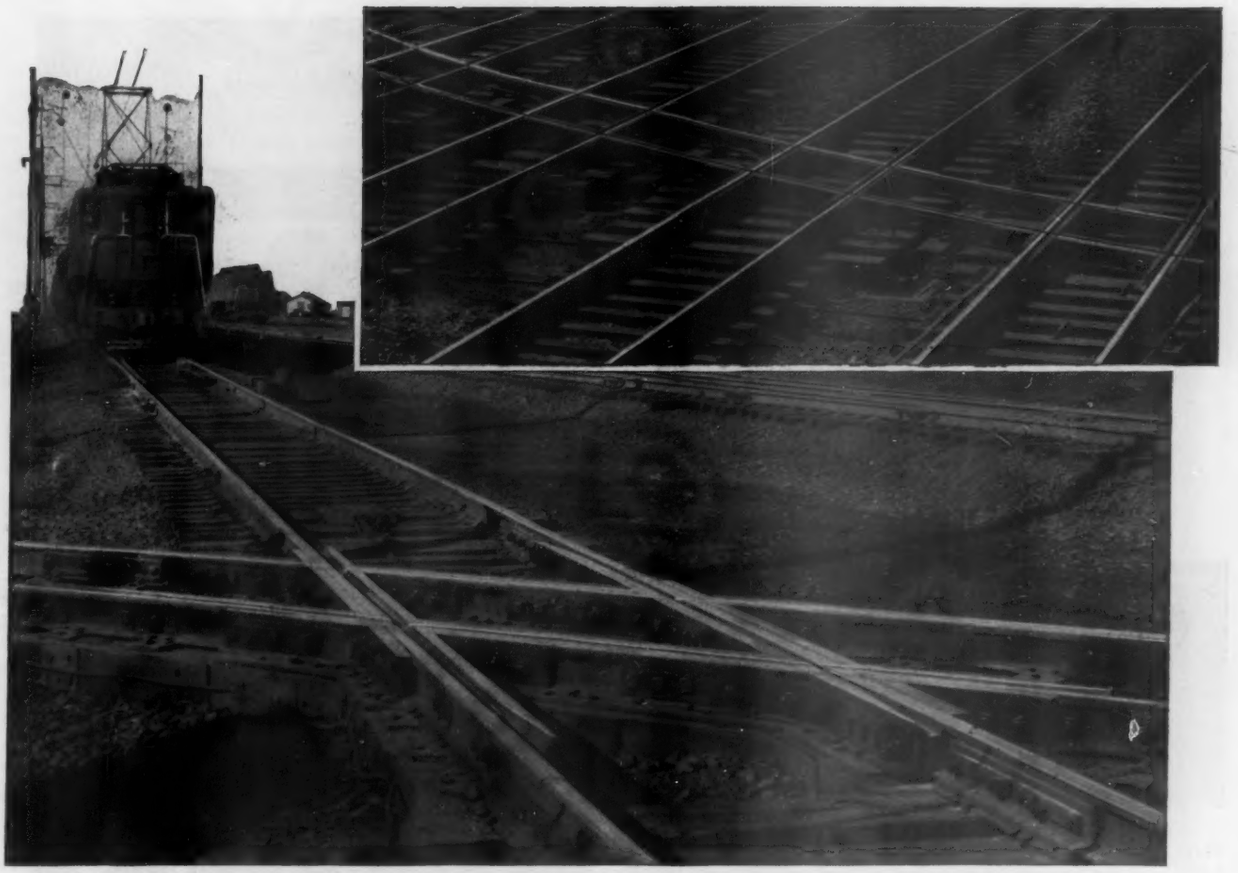
Measuring 40-ft. by 140-ft., the office building is of brick and concrete fire-resisting construction. It has a finished basement and two upper stories, and is so designed that a third floor may be added in the future.

A short distance from the new office building a two-story restaurant building, 24 ft. wide and 52 ft. long, is under construction and will be completed within a short time. It is designed to harmonize with the architecture of the office building. The first floor of this building will be used entirely as a restaurant capable of seating 32 people at one time. The second floor will have 10 bedrooms which will accommodate 16 members of outlying train crews. Toilet facilities will be provided on both floors and the building will be heated by an oil-fired warm air system.

The new freight classification yard at Springfield, a major element of the improvement program, will be described in a subsequent issue of *Railway Age*.



The Diesel shop has 48,000 sq. ft. of floor space. Of the five tracks, four are stub tracks and the fifth, top of drawing, is a through track



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is a long-term investment

In 1931, when we introduced the Bethlehem bolted, heat-treated crossing, we were confident that we had something. We'd spent a long time developing a crossing that, in our opinion, would be the most rugged type ever offered.

Now, nineteen years later, we have lots of backers in that opinion. Hundreds of these crossings are in use throughout the country, many of which have been in heavy-duty service for years. They've proved amazingly durable under the constant pounding of high-speed, main-line traffic.

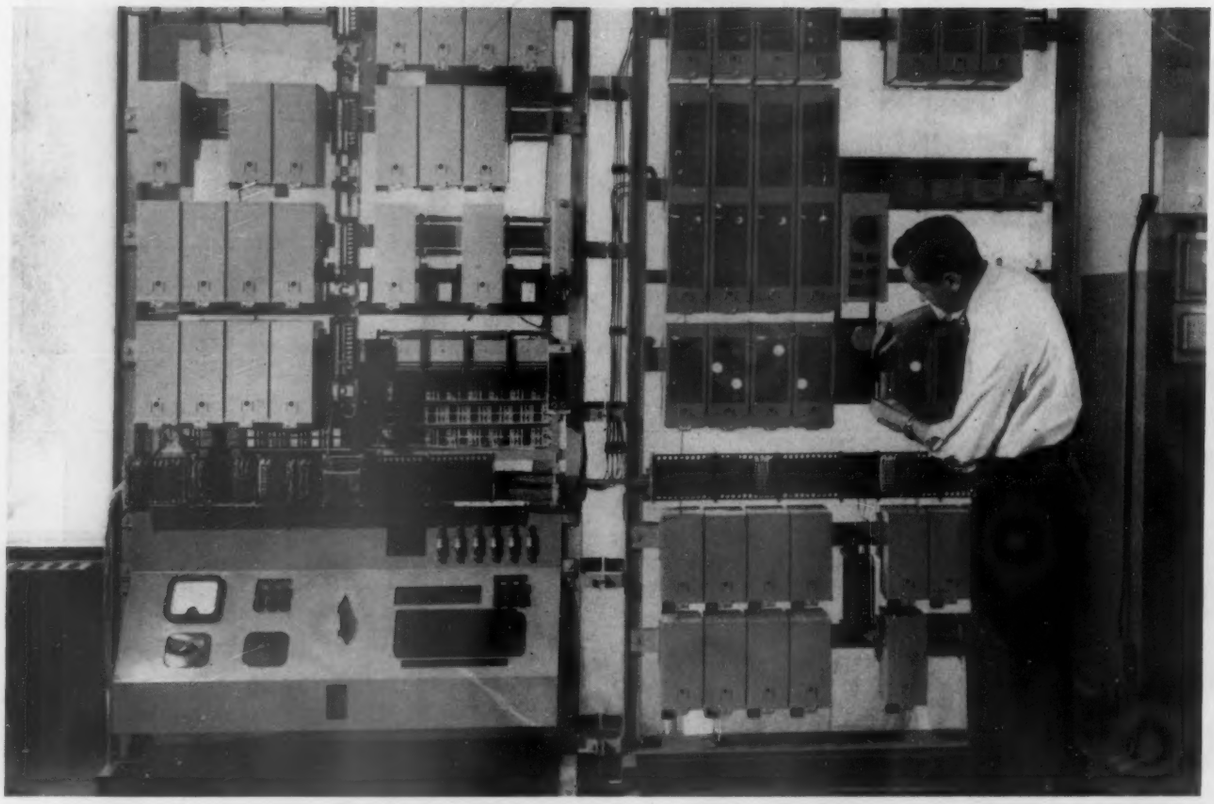
Durability is literally built into a Bethlehem bolted crossing. All parts are of forged or rolled steel, and after a unit has been assembled, it is carefully heat-treated. Then the crossing is dismantled, shot-blasted to remove scale, and reassembled with high-tensile alloy bolts. The finished job is hardened throughout the entire section; is highly resistant to wear, chipping, and spalling.

Further details are available whenever you wish them. Bethlehem engineers will be glad to work closely with you on two- or three-rail designs to your own or A.R.E.A. standards.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

★ BETHLEHEM STEEL ★



This is one-sixth of the behind-the-scenes "brain" of the Intelex system, which retains human contact between the public and the railroad by way of ticket sellers and reservation clerks. This system utilizes some of the principles of the dial telephone, magnetic recording, printing telegraph equipment, and automatic bookkeeping

Electronic Reservations System

An installation of a new combination of electronic devices, which will almost completely mechanize the handling of reservations for Pullman and coach space, and in busy hours will cut to less than a third the time now consumed in each of these transactions, has been begun by the Pennsylvania. Known as the "Intelex" system, the new automatic reservation devices were developed after months of research, utilizing the latest postwar techniques in communications, on the basis of the pioneer arrangement described in *Railway Age* of May 29, 1948, page 52. The first installation in Pennsylvania Station, New York, is already partly in operation for reservations from New York on seven Pennsylvania daily trains to Chicago, as reported in our June 17 issue, page 80. The system was developed by the International Standard Trading Corporation, an associate of the International Telephone & Telegraph Corp., and has been applied to railroad reservations jointly with the Pennsylvania.

The basic problem in speeding up and insuring accuracy of reservations and ticket selling has been to get right to the ticket seller's window a record of all the space available. The new system accomplishes this, and at the same time largely mechanizes the work of making reservations and completing ticket transactions. The Intelex system utilizes some of the principles of the dial telephone, magnetic recording, printing telegraph equipment, and automatic bookkeeping in achieving a completely new concept of reservation procedure. It works like this:

How It Works

A traveler at the ticket window asks the clerk for a roomette on the "Broadway Limited" to Chicago for the next day. Instead of telephoning the reservation bureau, as now, to determine if a roomette is available, the clerk uses a special instrument, dialing in code to select the destination city and day of departure, and immediately hears through the instrument a voice recording of accommodations available at that moment on trains to Chicago for the requested date of departure. A roomette is available on the "Broadway," so by telegraph printer he sends the reservation bureau a short coded message, requesting the roomette and giving a ticket number for it. The message is received instantly by the operator of a new "space control unit," the heart of the new system.

This unit, a console cabinet about five feet high, holds diagrams (reservation cards for each car) for all trains to Chicago for 60 days ahead. All the diagrams for one

day are in a newly designed file on a tray, there being 60 trays. The teleprinter message from the ticket clerk actuates the unit so that the tray containing the diagrams for the day wanted is selected by the machine and automatically slides out on a counter before the operator.

Quickly taking the proper diagram from the tray file, the operator assigns a roomette and transmits a confirmation back to the ticket seller as the tray automatically returns into the unit, which is then ready for the next transaction. At peak periods, messages are automatically "stacked," to go to the machine in order, as each preceding reservation is made. The elapsed time from arrival of the message to dispatch of the confirmation averages less than 30 seconds. The ticket clerk, his order confirmed, completes the sale with the traveler at a substantial saving in time.

Offers Alternatives

If, to continue the example, a roomette is not available for the next day on the "Broadway," the ticket clerk is informed by the recording what accommodations are available on the "Broadway," or on what other trains roomettes can be had for that day, and can then determine what space the traveler would prefer. The time saving at the ticket window, where information as to available space is immediately at hand no matter how busy the reservation bureau, is one of the major contributions of the Intelex system. New recordings are made in the reservation bureau whenever the last unit of a particular type of space on any train for any day is sold, or when cancellations make previously sold-out space again available.

Reservations made by travelers by telephone are likewise quickened. When calling, the patron speaks to a sales clerk in the reservation bureau, who uses the re-

on the Pennsylvania

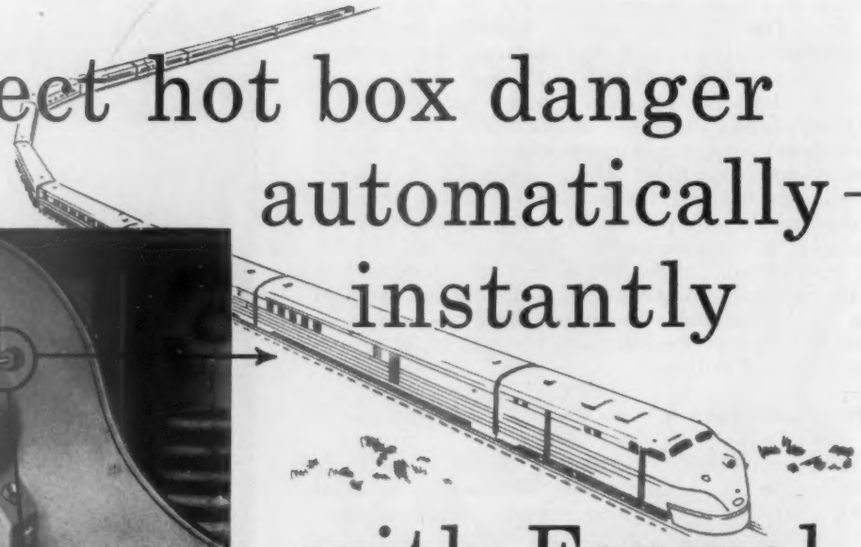
cording feature to determine quickly whether requested space is available. The clerk messages the space control unit operator, the reservtaion is assigned, and the traveler is asked whether he would like to pick up his tickets at the station or at one of the city ticket offices. Advice of the reservation, the purchaser's name, and the time limit for picking it up, are immediately transmitted to the office the traveler has selected.

Heretofore the customer who reserved space by phone went to any ticket office and asked a clerk for his reservation, whereupon the clerk telephoned the reservation bureau for confirmation. Now, the printed message, on tape, becomes a file record at the ticket office designated and when the traveler comes in it is only necessary to issue the ticket to complete the sale. A new type of file retains the tapes, and indicates whenever a reservation has not been picked up within the time limit. Should that happen, word is sent back to the reservation bureau, and the space is replaced for sale. If the traveler telephones to cancel the reservation, the cancellation is passed to the ticket office and the space replaced for sale. The Intelex system also embodies a new form of car diagram card which provides a permanent record of every reservation transaction. The card is microfilmed before being placed on the train at the start of the run.

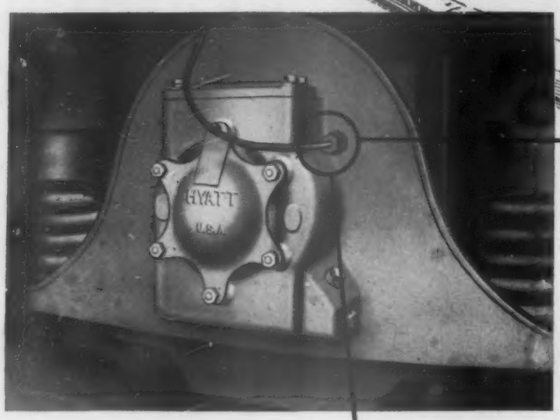
This is the alphabetical file used in ticket offices. The clerk is removing from the file a paper tape, received earlier by teleprinter from the reservation bureau. In code on the tape are the traveler's name, date of reservation, type of accommodation, train, and time limit for picking up tickets

The operator has received, on the teleprinter machine to the left, a coded message from a ticket seller requesting a reservation. While the message is coming over the teleprinter from the ticket seller, the space control unit (shown at the right) automatically selects, from among 60 trays in its cabinet, the proper tray containing the car diagrams for the New York-Chicago trains on the day requested. The unit ejects the tray onto the desk before the operator, who quickly selects the proper diagram from the tray, and assigns the reservation. She then types a confirmation on the teleprinter, giving, in code, details of space assigned. Closing the tray file with her right hand, she sets keys on the switch box above the teleprinter to send the message to the proper office

Detect hot box danger automatically—instantly



with Fenwal JOURN-A-LARM System



Typical THERMOSWITCH® and Cable installation. Low-cost maintenance — requires no special knowledge or equipment.

Control panel unit provides immediate detection and location of overheated bearing. Switches are numbered to correspond with wheel number of car.

APPROVED BY LEADING RAILROADS. The Fenwal JOURN-A-LARM System automatically detects and warns of hot box danger. A mere flip of a switch on the JOURN-A-LARM control box in the car instantly identifies the overheated bearing. Eliminates need for train crews to check individual bearings *outside* the car.

This unusual system — continually monitored through a failproof circuit — automatically gives a visible, audible warning inside the car when bearing heat exceeds specified temperature. Nerve centers of the JOURN-A-LARM are the Fenwal THERMOSWITCH® thermostats located in each bearing. Unique, highly sensitive, vibration-proof THERMOSWITCH mechanism assures positive action under every operating condition.

Fenwal THERMOSWITCH thermostats are also used for Car Heating, Air Conditioning, Diesel Overheat Detection. Write for bulletin. Fenwal Incorporated, 177 Pleasant Street, Ashland, Mass.; 11 South Burlington Ave., Los Angeles 4, Cal.

Fenwal

Temperature Control Engineers

JOURN-A-LARM

SENSITIVE . . . *but only to heat*

GOING ROUND-AND-ROUND ON BRAKE BEAM CLAIMS?

If so, come down to this:

With 195,000 A.S.F. Cast-Steel Unit Brake Beams now in service, there's *not a single case* on record of structural failure, or of maintenance due to normal wear. That's why these beams with *integral heads* are first, today, in sales.

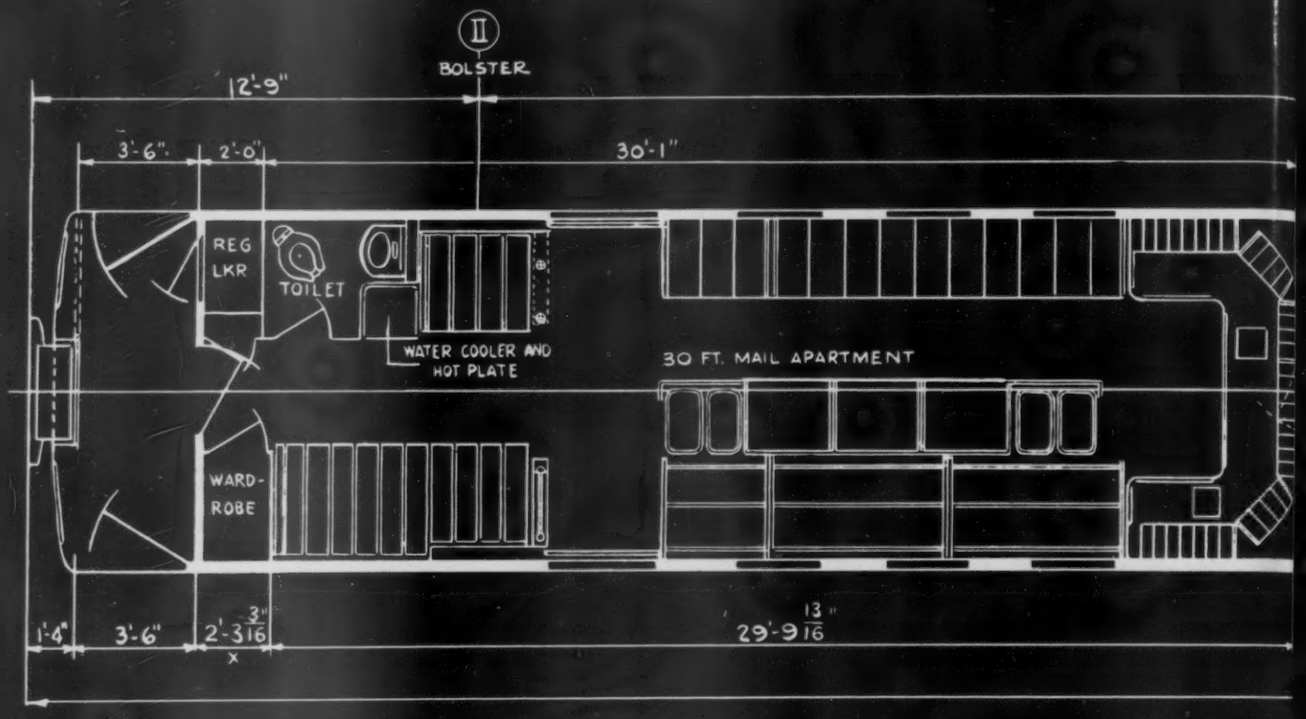
A. A. R. Approved.
Certificate No. 54.

The RAILROAD HOUR
NBC Every Monday Night

A·S·F CAST-STEEL UNIT BRAKE BEAM

AMERICAN STEEL FOUNDRIES

MINT MARK OF ⬡ FINE CAST STEEL



RDC-1

90 passengers

RDC-2

71 passengers

17 ft. baggage section

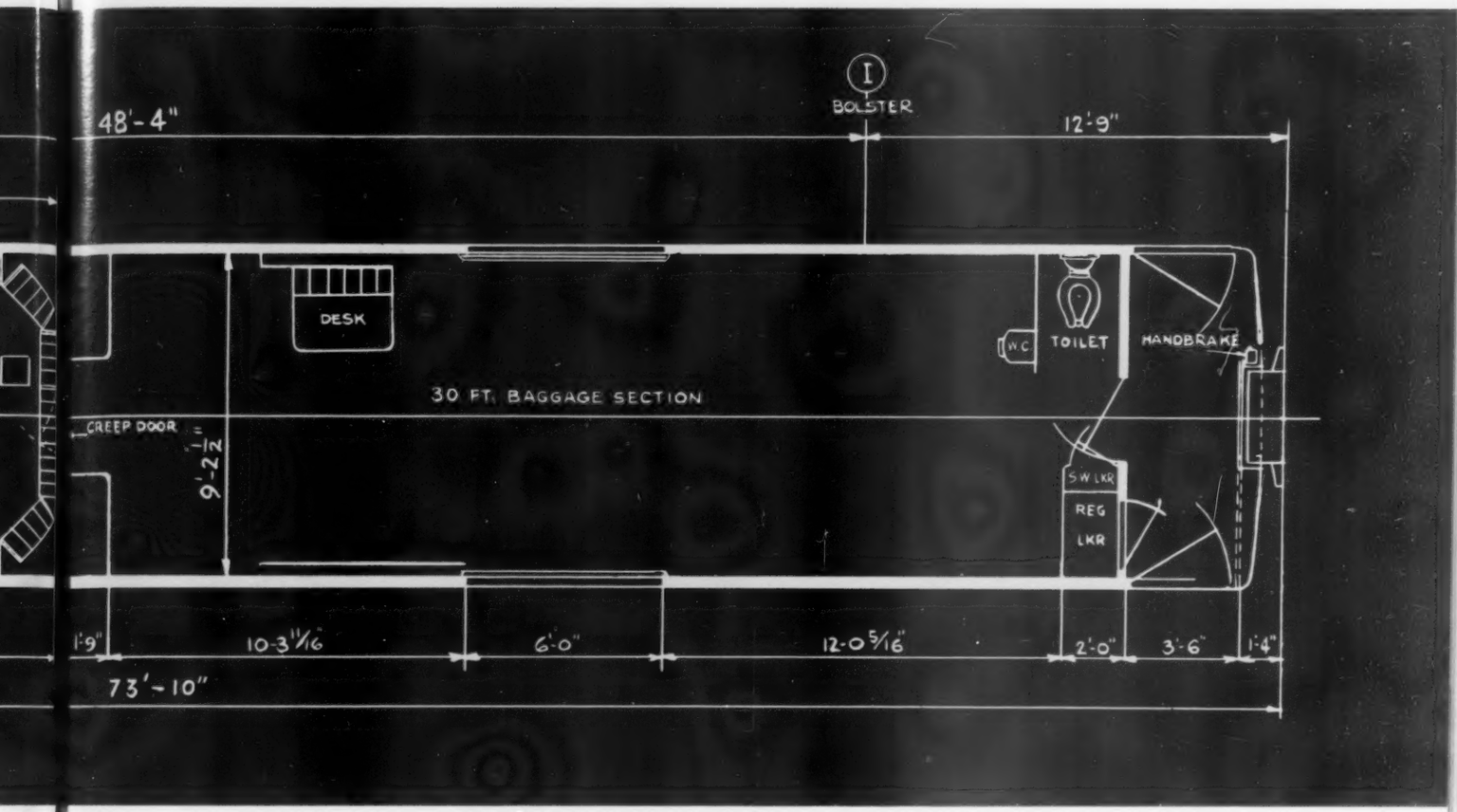
RDC-3

49 passengers

16 ft. baggage section

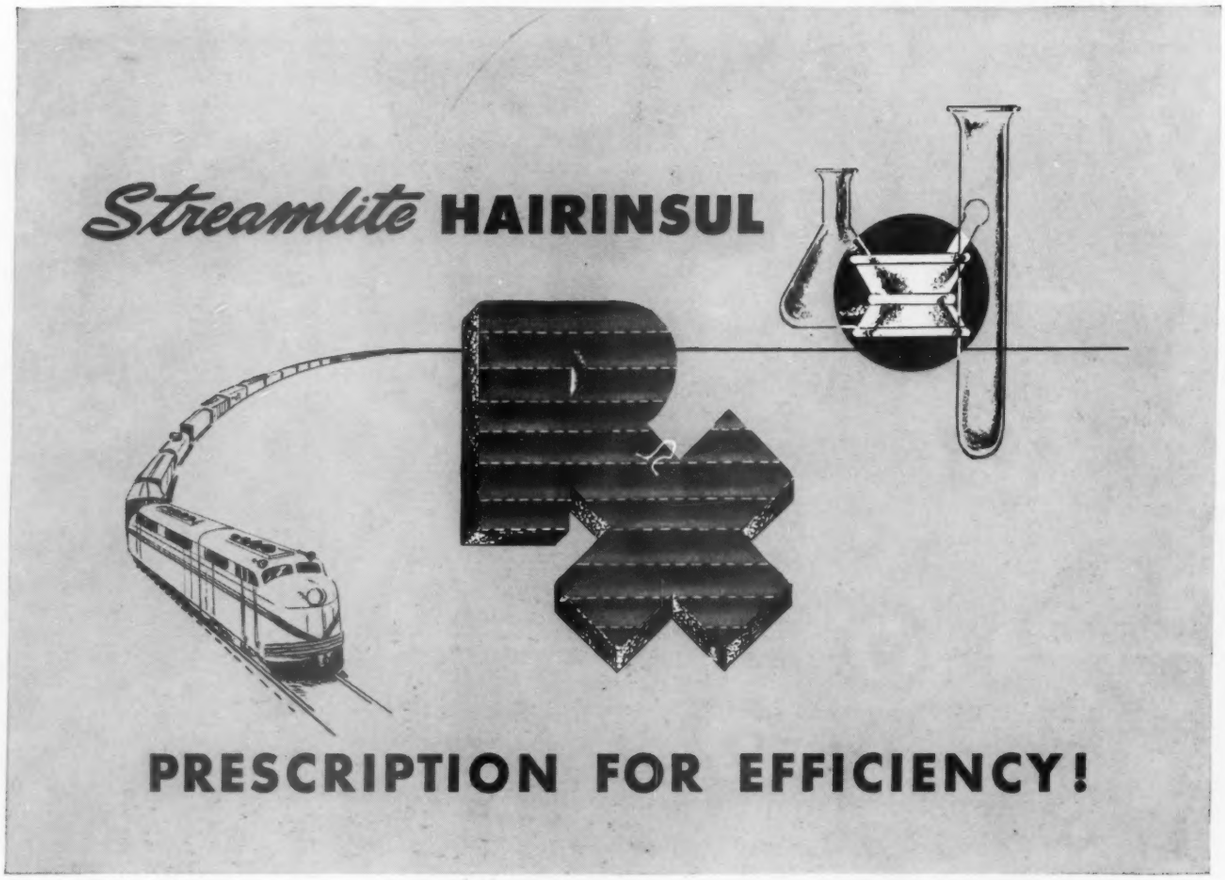
15 ft. RPO apartment

Budd



NOW THERE'S RDC-4

Built for mail, baggage and express exclusively. No passengers. The 73'-10" rail diesel car is divided into two compartments, each 30 feet long, one, for mail, the other, for baggage, mail storage or express. The capacity of RDC-4 is 10,000 pounds RPO load and 22,000 pounds baggage section loading. Power, brakes, controls and equipment features are identical with those in other types of RDC. Price, at Philadelphia, $126,850. The Budd Company, Philadelphia 32.



There's no better prescription for efficient refrigerator car insulation than Streamlite HAIRINSUL.

Leading refrigerator car builders have been specifying all-hair insulation for nearly half a century — and they find today that Streamlite HAIRINSUL, with its 40% less weight, is the most efficient and economical.

Streamlite HAIRINSUL assures you all the advantages given at the right — and more besides. Write for complete data.

LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

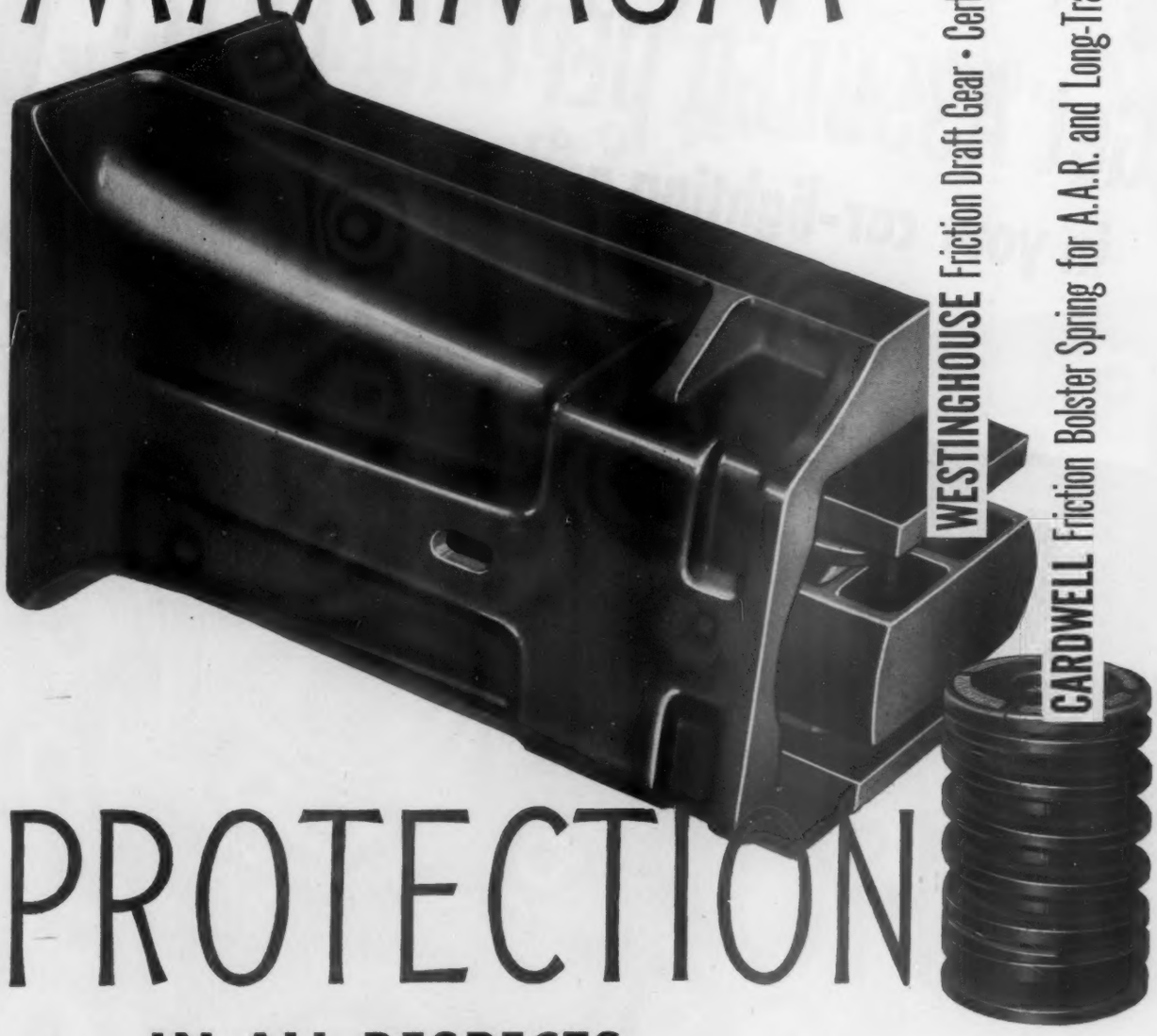
Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged

Streamlite HAIRINSUL

AMERICAN HAIR & FELT CO.

Dept. H507, Merchandise Mart, Chicago 54, Ill.

MAXIMUM



WESTINGHOUSE Friction Draft Gear • Certified A.A.R.

CARDWELL Friction Bolster Spring for A.A.R. and Long-Travel Springs

PROTECTION

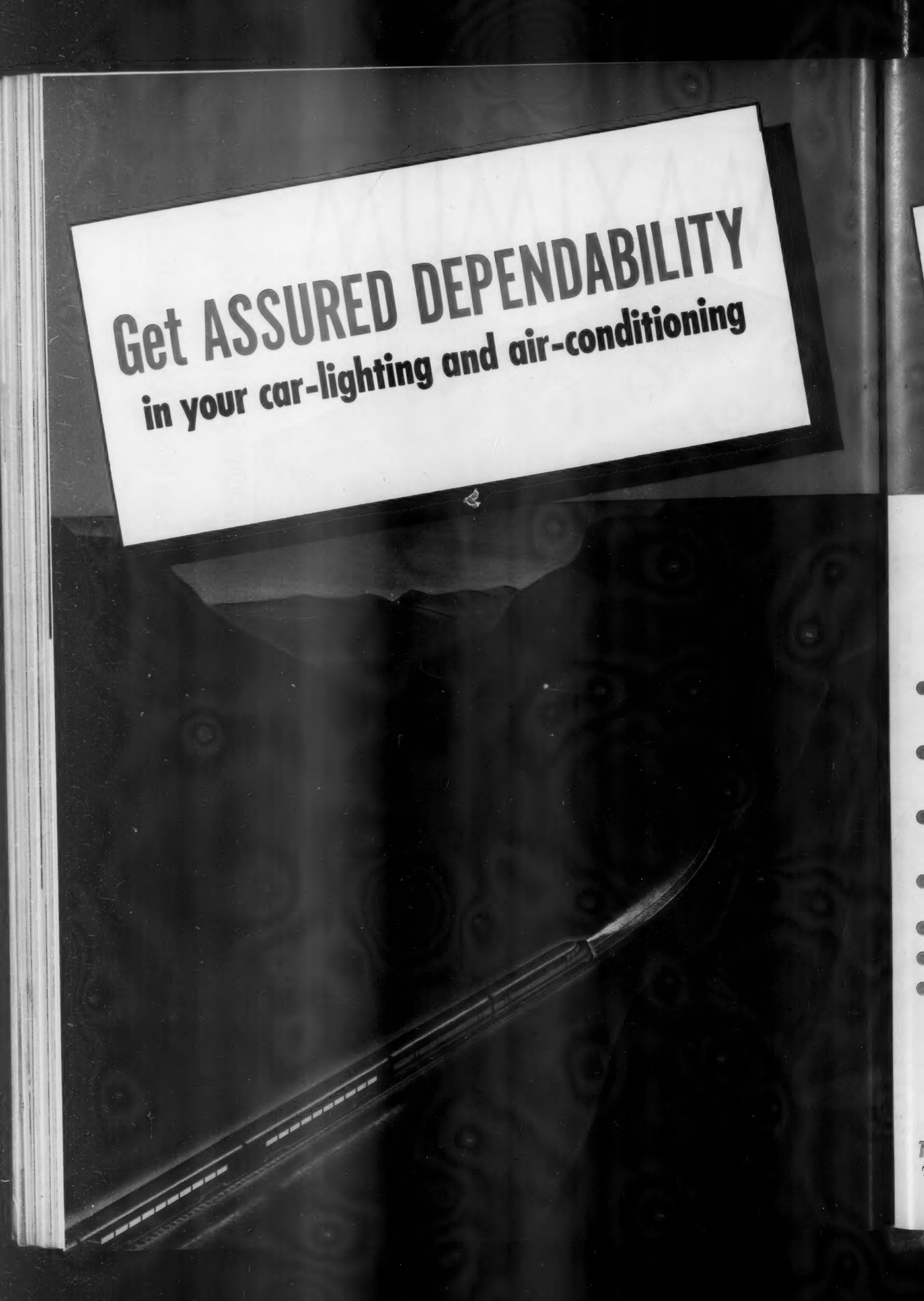
IN ALL RESPECTS

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

2711


Get ASSURED DEPENDABILITY
in your car-lighting and air-conditioning

EXIDE-IRONCLAD BATTERIES

give you assurance of safe, positive, economical service

With Exide-Ironclad Batteries in your passenger cars, you can count on:

- **AMPLE POWER** for entire car-lighting and air-conditioning loads . . . uniform voltage at proper values throughout run.
- **STEADY LIGHTS and COOL CARS**—high sustained voltage that keeps lights strong and compressors running steadily even during long stops.
- **UNINTERRUPTED SERVICE**—trouble-free performance—withstands vibration, shock, service variations and temperature differences.
- **LOW RATES OF DEPRECIATION** . . . exceptionally long life.
- **EASY TO SERVICE.**
- **LOW COSTS** of maintenance and repair.
- **ABILITY TO MEET ALL REQUIREMENTS** of car design and electrical loads. They can be easily changed or recharged in yard . . . are safe, clean, quiet.

For *assured dependability* . . . day after day, year after year . . . equip your cars with Exide-Ironclads—the service-proved batteries that are outstanding for car-lighting and air-conditioning . . . outstanding in performance, in service life, in economy.

Exide-Ironclad Batteries are the Best Power Buy—AT ANY PRICE

"Exide-Ironclad"
Reg. Trade-mark U.S. Pat. Off.

1888—DEPENDABLE BATTERIES FOR 62 YEARS—1950

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

"Cat" Motor Graders maintenance

IT'S NOT OFTEN a machine gives you *overwhelming proof* of its value the first few days you use it. But this "Cat" No. 212 Motor Grader did for the Alton & Southern R. R. On a job cutting down embankment—a job ordinarily costing, for labor alone, $400 plus—this No. 212 slashed the cost to $5.76. What's more, it shaved the working time from 2 days to less than 4 hours. And it's a rig you can keep busy all the time. Here you see it building a new road.

With the swing to trucks for track and roadbed maintenance, a "Cat" Motor Grader is a most useful and versatile tool. Besides building new roads along the track right-of-way, it can keep them graded. It can pull ties and take up track. It can clear snow. And it can do all this at remarkably low cost.

There's another big advantage in using big yellow equipment. "Caterpillar" dealers maintain over 300 parts stores and service shops in the U. S. and Canada. Large parts stocks are carried to provide immediate service. Get the *facts* from your "Caterpillar" dealer today—he'll be glad to *show* you how "Cat" Motor Graders can slash costs for you!

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

LOOK UNDER THE HIDE

OF "CAT" MOTOR GRADERS

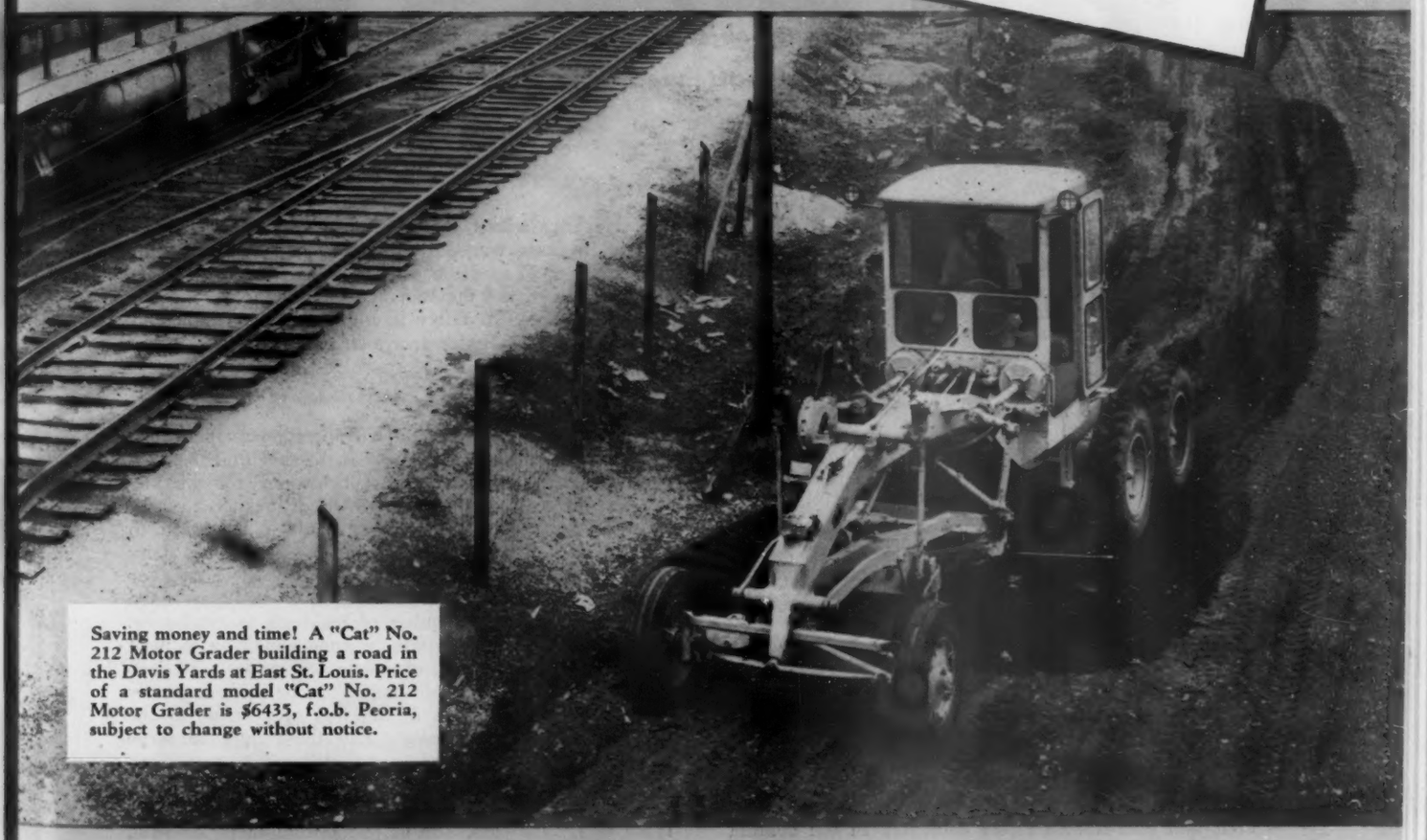
1 *Only* "Caterpillar" designs and builds the whole Grader. This undivided responsibility assures long life and excellent parts service.

2 *Each of the 3 sizes* is a completely different machine. There's no performance penalty due to excessive frame weight or too little horsepower.

3 No other graders have the dependable yellow engine, famous for delivering 60-minute hours day after day.

can slash your costs!

This No. 212 saved $400 in 4 hours for the Alton & Southern R. R.



Saving money and time! A "Cat" No. 212 Motor Grader building a road in the Davis Yards at East St. Louis. Price of a standard model "Cat" No. 212 Motor Grader is $6435, f.o.b. Peoria, subject to change without notice.

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

A.A.R. Mechanical Division Looks Ahead

A. K. Galloway
Chairman

B. M. Brown
Vice-Chairman

Vice-Chairman
Executive Vice-Chairman

Fred Peronto
Secretary

J. R. Jackson
Mechanical Engineer

Future objectives emphasized in addresses and reports at well-attended three-day annual meeting in Chicago

Approximately 700 railway officers, supply company representatives and others showed their interest in mechanical matters by attending the twenty-fourth annual meeting of the Mechanical Division of the Association of American Railroads at the Congress Hotel, Chicago, June 26 to 28, inclusive. Chairman A. K. Galloway, general superintendent motive power and equipment, Baltimore & Ohio, presided at all sessions and the program followed closely that published in the *Railway Age* of June 24. A strong underlying note, stressed by several of the speakers and evidenced by most of the committee reports, was the important work now being done by the division and the strenuous program of research and coordinated effort necessary in the coming months if equipment conditions are to be improved so that railroads can meet competitive traffic demands.

In the opening address, J. W. Barriger, president of the Chicago, Indianapolis & Louisville, said that the Association of American Railroads is the greatest single contributing factor in progress and the protection of railroads from burdens forced on them by unwise regulation. He emphasized the natural advantages railroads possess in mass transportation over long distances at high speeds, and said that this implies still more powerful locomotives, the maintenance of car and track conditions conducive to safety in high speed operation and drastic steps to minimize delays en route.

General Addresses

In his talk, J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R., said that the past year had been a particularly difficult one for the mechanical departments because of conditions created by the coal and steel strikes which made it necessary to close many shops and because of the change in daily hours last fall. He congratulated them, however, for their share in bringing about increased safety, reflected in a reduction in the number of accidents to employees.

The railroads, he said, are in good condition to meet any demands for service, except in one respect: a shortage in the supply of freight cars. This, he said, is greatly to be regretted, because of the loss of revenue to the railroads which it represents and the failure to serve their patrons completely.

In looking ahead, he said that the railroads may have to change their minds with respect to the use of special types of freight cars. The shippers want them, he said, and their desires cannot be ignored.

E. H. Davidson, director, Bureau of Locomotive Inspection, Interstate Commerce Commission, explained that one primary requisite for the safe use of Diesel power is cleanliness to reduce fires, accidents and attendant costs. He referred to wheel failures and said that railroads and manufacturers are giving much thought

to improved inspection and maintenance practices which will tend to minimize wheel failures.

Mr. Davidson referred to the 34,000 steam locomotives still in service and said that there has been an increase in defects during the last six months, causing a number of so-called "minor accidents," which is a misnomer inasmuch as some of these accidents have resulted in permanent personal injuries. Mr. Davidson said that mechanical departments have done and are doing a fine job in reducing employee accidents. He referred to "cooperation" which must not be "a one-way street" and suggested that railway mechanical and transportation officers on all roads feel free to call on the Bureau of Locomotive Inspection at any time with the assurance that they will receive every practicable help in solving their mutual problems.

In an address on June 27, K. C. Underwood, president, Merchants Despatch Transportation Corporation, reviewed briefly the history of the Mechanical Division from the inception of the first code of interchange rules in 1864, forming of the Master Car Builders' Association in 1867 and the Arbitration Committee in 1887 with authority to hear arguments, develop facts without prejudice to either party and render decisions in disputes, thus making practicable the free interchange and movement of freight cars from one railroad to another throughout the country. He gave credit to this highly important and constructive work for the national unity, agricultural development and industrial progress which is America today.

Mr. Underwood said that times and conditions are changing and railroads must accept the facts of keener competition, increased taxes and other costs, offsetting these with better service, waste elimination, more efficient equipment and the use of improved designs and materials which will be less costly to maintain. He stated that individual railroads and private car companies depend on getting a fair break under the interchange rules and that the welfare of all roads hinges to a large extent upon how well the Mechanical Division does its work.

B. M. Brown, New Chairman

On the last day of the annual meeting, announcement was made of new officers-elect of the Mechanical Division. B. M. Brown, general superintendent of motive power, Southern Pacific, who served as vice-chairman of the division and actively participated in the proceedings, was elected chairman for a two-year term expiring in June, 1952. H. T. Cover, chief of motive power, Pennsylvania, was elected to serve as vice-chairman for the same period.

The terms of the following members of the General Committee expired in June, 1950, and as Sec. 5 (a) of the rules of order of the division provides that one-half of the General Committee shall be elected at one time, the following were elected to serve for a two-year term expiring June, 1952: A. K. Galloway, general superintendent motive power & equipment, Baltimore & Ohio; R. G. Henley, general superintendent motive power, Norfolk & Western; J. P. Morris, general manager, mechanical department, Atchison, Topeka & Santa Fe; M. R. Brockman, assistant vice-president, Southern; J. F. Ryan, superintendent of machinery, Louisville & Nashville.

Mechanical Division Committee Reports

GENERAL COMMITTEE

As of December 31, 1949, 1,672,425 railroad-owned and 208,470 private-car line cars — a total of 1,880,895 interchange freight cars or 86.1 per cent—were equipped with AB brakes. This was an increase of 120,799 since December 31, 1948. In citing these figures the General Committee called attention to the latest order of the I.C.C. of October 10, 1949, which, in effect, requires that cars not equipped on December 31, 1949, if 2,000 or less in number, must all be equipped or withdrawn on or before December 31, 1950, and where the number is over 2,000, one half must be equipped or withdrawn on or before December 31, 1950, and the remainder on or before December 31, 1951.

Mechanical Inspection Department.—This department has continued intensive checking of wheel-shop, air-brake-maintenance, reclamation, and journal-box-packing practices. It continues to give special attention to proper repairs to cars to insure going through to destination without intermediate shopping. Special consideration has also been given to compliance with Interchange Rule 2. The department will issue another of its annual reviews early in 1951 which the General Committee urges be brought to the attention of every interested mechanical-department representative so that rules and standards of the division will be properly observed.

Refrigerator Car Designs.—Frozen-food refrigeration is on the Refrigerator Car Research Bureau's program for 1950-51. The study includes tests to develop better ice and salt proportions to secure lower commodity temperatures when transporting frozen foods. The investigation will include three transcontinental trips and a series of short test trips between Chicago and New York.

Axle Ratings in Tender Service.—In the 1947 report of the Committee on Locomotive Construction a procedure was recommended for calculating tender axle design in establishing loadings for standard passenger car axles when used under tenders, which was approved by letter ballot. Specific wording was questioned by representatives of certain railroads and the matter held in abeyance for review by the Committee on Locomotive Construction and Committee on Axle and Crank-Pin Research. Certain revisions in the text have been proposed by these committees and approved by the General Committee, the principal effect of which has been to base the required axle size and vertical center of gravity corresponding to those of a tender carrying *not less than* 90 per cent of the full capacity of water and fuel rather than on exactly 90 per cent, as stated in the proposition when adopted.

Coordinated Mechanical Associations.—Attention is called by the General Committee to the fall meetings of the Coordinated Mechanical Associations—the Air Brake Association; Car Department Officers' Association; Electrical Section, Mechanical Division, A.A.R.; Locomotive Maintenance Officers' Association; Master Boiler Makers' Association; and Railway Fuel & Traveling Engineers' As-

sociation. They will meet September 18-20 at the Sherman Hotel, Chicago, except that the Car Department Officers' Association will meet at the Hotel LaSalle. An extensive exhibit of railway electrical equipment and appliances will be held at the Sherman Hotel. The General Committee recommends that the mechanical departments of the railroads allow as many of their supervisory officers as possible to attend these annual conventions and examine the exhibits in connection therewith.

Passenger Car Standardization.—Under the direction of the board of directors of the association, a joint committee of the Operating-Transportation Division and the Mechanical Division has been cooperating with a committee of the American Railway Car Institute in developing standard designs for passenger coaches, dining cars, lounge cars, parlor cars, observation cars, and baggage and express and mail cars. This pertains to the floor plan, location of bulkheads, lockers, window sizes, seat spacing, etc., leaving complete latitude to the purchasers as to interior furnishings, upholstery, coloring, etc. This project is rapidly nearing completion. Following its completion, similar action will be taken with respect to standardization of sleeping cars.

GEARED HAND BRAKES

A.A.R. certificates of approval have been issued for 28 types of geared hand brakes—15 vertical wheel types, 10 horizontal wheel types and 3 lever types. These are shown in the accompanying table.

In order to clarify the test requirements for specimens of geared hand brakes submitted for A.A.R. approval, the committee recommended changes to Manual pages E-61 to E-64-F. The report included the test code for approval certificate for geared hand brakes, outlining in detail the procedure for both vertical and horizontal wheel hand brakes and for the lever type hand brakes.

Specifications for Repairs and Reclamation.—Some roads, having questioned the necessity for testing reclaimed geared hand brakes by the procedure followed for certification tests of new hand brakes, the committee, after investigation, recommended the elimination of that requirement and the amplification of the bench test. The recommendation, a letter ballot proposal, would eliminate Manual pages E-96-A to E-96-F and revise Manual pages E-95 and E-96.

The subheading of the list of A.A.R. approved types of geared hand brakes in Interchange Rule 101 has been changed to include reference showing type designation on the housing.

Certificate of approval will be revised to cover the substitution of a pressed wheel housing and back plate on universal vertical wheel hand brake, Type 5-705.

The report also carried reference to replacement hand wheel for vertical wheel brakes and a foot operated geared brake.

Injuries to Employees.—Further joint consideration of injuries to employees referred to in the 1949 report with the Committee on Train Service Accidents and the Engineering Committee of the Gear Hand Brake Manufacturers has resulted in an agreement outlined in detail in the report with respect to (1) Uniformity of application; (2) Uniformity of ease of release; (3) Non-spin wheel; (4) Standardization of bell crank; (5) Uniform length of brake chain; (6) Vertical location of brake step on box cars; and (7) Proposed education program.

GEARED HAND BRAKES FOR WHICH CERTIFICATES OF APPROVAL HAVE BEEN ISSUED

	Number by Types		
	Vertical-wheel	Horizontal wheel	Lever type
Ajax Hand Brake Company	1	..	..
American Car & Foundry Co.	..	1	..
Canadian Cardwell Company	..	1	..
Klasing Hand Brake Company	2	..	1
Superior Hand Brake Company	1	3	..
Orme Company (Champion Brake Div.)	2	..	..
Union Asbestos & Rubber Co. (Equipment Specialties Div.)	1	1	1
Union Railway Equipment Company	1	1	..
Universal Railway Devices Company	4	2	1
W. H. Miner, Inc.	1	..	..
Total	14	8	3

The members of the committee are E. P. Moses (chairman), engineer car equipment, New York Central system; J. P. Lantelme, general foreman, Pennsylvania; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; R. G. Webb, superintendent air brakes, Chicago, Milwaukee, St. Paul & Pacific; and J. R. Jackson, mechanical engineer, Mechanical Division, A.A.R.

The report was accepted without discussion.

PRICES FOR LABOR AND MATERIALS

The committee has continued the work of analyzing material, labor and new equipment costs in A.A.R. Interchange Rules 98, 101, 107, 111, and 112 of the Freight Car Code, and Rules 21 and 22 of the Passenger Car Code. [*Detailed tables of price revisions were included with the report for all these rules except Rule 111.*—EDITOR]

All miscellaneous material prices in Rule 101 were rechecked as of March 1, 1950, quotations submitted by the purchasing agents of the 10 selected railroads, representing 39 per cent of total freight car ownership in the United States and Canada, showing a mixed trend in material markets. Item 142-A was eliminated as it is no longer permissible to apply "U" type coupler cross key retainer to foreign cars. Item 142-B was modified to indicate that the "T" type coupler cross key retainer is no longer an A.A.R. Standard.

Modifications to Rule 107 were Item 42 to indicate charge covers the retainer, or lock, or both; Items 95 and 96 to include plywood and to indicate types of securement intended; and Items 141 and 142 to include plywood.

No modifications were recommended to Rule 111.

Recommendations were made for Rule 112 regarding reproduction pound prices of new freight cars of all classes, in order that Supplement of August 1, 1950, may reflect 1949 costs. New prices recommended are based on cost of 58,897 freight cars constructed during 1949.

In Passenger Car Rule 21, Items 16, 20-F, 20-G, 20-K, 20-L and 20-M were modified to indicate charges cover all types of brakes.

Material price quotations under Passenger Rule 22 were rechecked on the basis of quotations as of March 1, 1950, showing a slight upward trend, with the exception of service metal on wrought-steel wheels which reflects a slight decrease brought about by increase in scrap prices. Note 1 following Item 41-A was modified to clarify the intent. Note 6 following Item 63 was modified to require passenger type brake beams removed as defective to be held and promptly reported to car owner for disposition.

Time studies are being made by a special subcommittee covering periodic attention to AB and AB-1-B type, U type and D-22 type air-brake equipment. When time studies are completed, and if the results justify modification of existing allowances or the addition of new items, such changes or additions will be made.

The committee intends to investigate labor and material costs again in October and if sufficient change develops, necessary revisions will be made and inserted in the Rules, effective January 1, 1951.

Members of the Committee on Prices for Labor and Materials are T. J. Boring (chairman), general foreman, M. C. B. Clearing House, Pennsylvania; P. F. Spangler (vice-chairman), assistant superintendent motive power, St. Louis-San Francisco; J. D. Rezner, superintendent car department, Chicago, Burlington & Quincy; L. B. George, assistant chief motive power and rolling stock, Canadian Pacific; G. F. Flanagan, general car inspector, New York Central; J. J. Root, Jr., vice-president, Union Tank Car Company; A. H. Gaebler, superintendent car department, General American Transportation Corporation; and G. R. Andersen, superintendent car department, Chicago & North Western.

The report was accepted without discussion.

SAFETY APPLIANCES

The committee has continued to handle subjects pertaining to safety appliances assigned it by the General Committee, as well as questions referred by other committees and member roads.

In cooperation with the Committee on Brakes and Brake Equipment the committee followed the service performance of the ABLC brake equipment installed on 398 lightweight hopper cars of the Illinois Central. Early investigation developed that the ABLC brake was not fully functioning as designed and intended. Certain changes in design have been made by the manufacturers and improved devices installed. Representatives of the air brake manufacturers made a joint inspection of 40 cars equipped with modified ABLC brakes and furnished a report covering this inspection which is being studied by the interested committees. When development work has been completed and operation of the brake has received full approval, proper specifications and suitable operating rules will be submitted to the member roads for letter ballot approval.

The sixteenth edition (1950) of United States Safety Appliances has just been published, with the approval of the I.C.C. The principal change in the revised edition is the addition of a new note to page 105 to cover the last two orders issued by the I.C.C. on the application of AB brakes to cars used in interchange service.

A revised issue of "Maintenance of Air Brake and Air Signal Equipment on Locomotives and Cars," (last revised in 1941) will be published. Everything is ready with the exception of one rule on which negotiations are being conducted with the I.C.C.

Applications for approval of three new designs of metal running boards have been received but to date all of the requirements have not been met by any of the applicants. The committee approved a proposed revision by the Committee on Car Construction of the test requirements on metal running boards to clarify the present static test and to incorporate provisions for a torsion test. It was recommended, as a letter ballot proposition, that the last paragraph of Section 3, Manufacture, contained in Specifications for Running Boards Other Than Wood, for Box Cars, Other Roofed Cars, and Tank Cars, etc., Manual page C-25B, be so modified.

Members of the committee are R. G. Henley, (chairman), general superintendent motive power, Norfolk & Western; H. T. Cover, chief motive power, Pennsylvania; G. W. Bohannon, chief mechanical officer, Chicago & North Western; F. K. Mitchell, manager of equipment, New York Central system; J. M. Nicholson, director, department of research, Atchison, Topeka & Santa Fe; and A. K. Galloway, general superintendent motive power and equipment, Baltimore & Ohio.

The report was accepted without discussion.

INTERCHANGE RULES

During the year Case 1833 was decided. The principal changes recommended in the report follow; none were considered to necessitate submission to letter ballot:

Modification of Interpretation No. 5 of Rule 2, to provide more equitable charges for use of cranes or derricks in connection with transfer or adjustment of lading.

While an extension to January 1, 1952, was recommended for Paragraph (u-4) of Rule 3, Class E-3 Cars, also included is a recommendation to add a new note following this paragraph, to indicate that no further extension beyond January 1, 1952, will be granted for this requirement.

With the concurrence of the Committee on Car Construction, modification of the note following Section (t-2-b) of Rule 3 was recommended, to prevent the reapplication of questionable designs of truck side frames.

(*Continued on page* 57)

reflect...

Pause a moment during a busy day to think about this important revenue factor. *Travel, motion, going somewhere*—a *thrilling experience* when accompanied by *comfort*—Karpen comfort that *adds* to the *enjoyment* of transportation services. Transportation is a convenience, but to be *sold* it must be comfortable and the translation of the word "Karpen" is "comfort" in transportation talk!

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The Buckeye C-R (Cushion-Ride) Truck is designed to meet the requirements of all types of modern freight service. It includes the following features which provide superior riding qualities and long life:

- One side frame design of a given capacity is suitable for all AAR Standard or Alternate Standard coil springs with travels of 1-⅝", 2-½", 3-1/16", or 3-11/16".
- Full box section bolster end construction provides maximum strength and adaptability to various spring travels.
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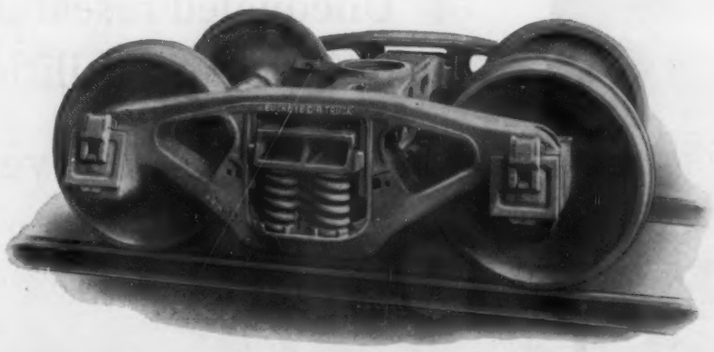
- Low rate wedge springs minimize reduction of control due to wear.
- Friction parts are self cleaning to prevent accumulation of dirt in service.



B

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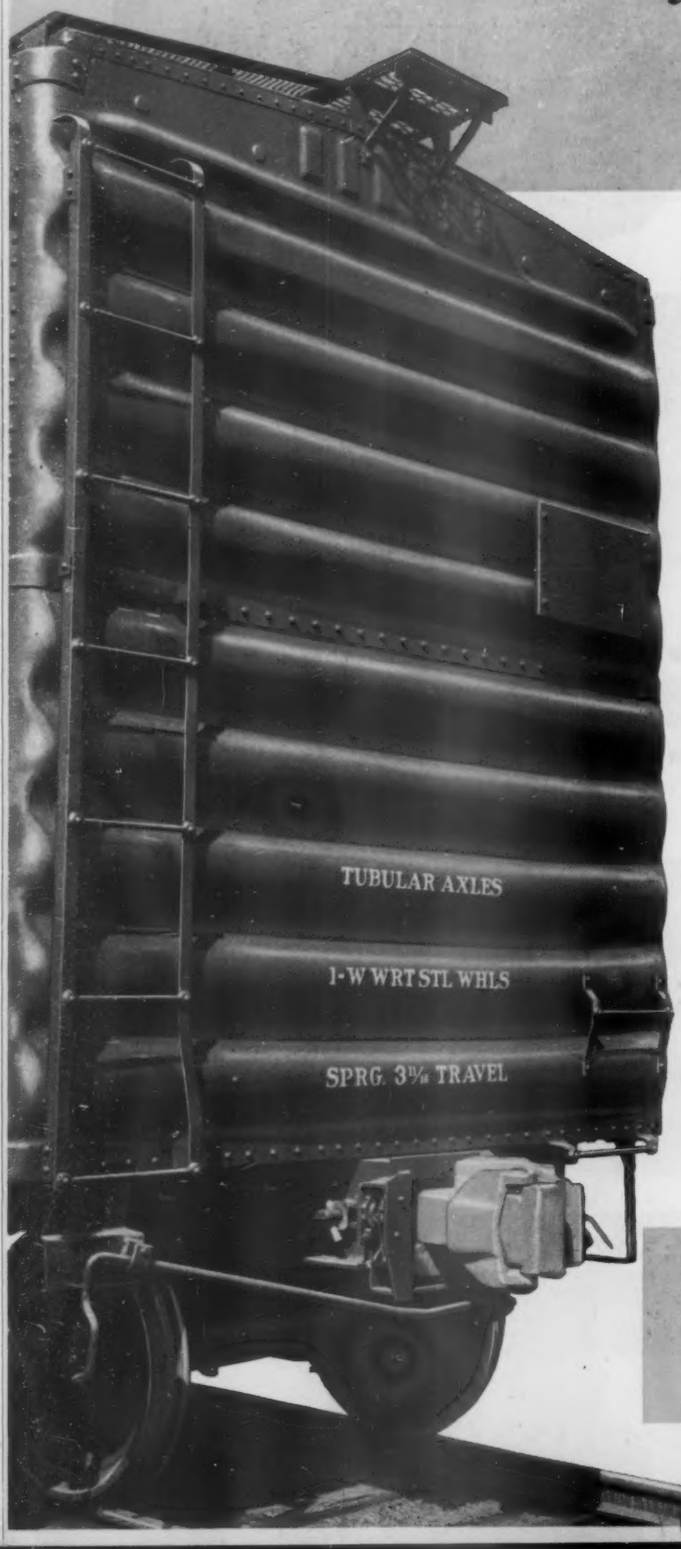

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PS-1 construction in automobile car for Chicago and North Western.

Strategically located Pullman-Standard plants are equipped to meet the needs of America's railroads for superior modern freight cars of standard and special types.

40-ton refrigerator car for the Santa Fe.

In addition to box cars, hoppers, and other conventional types, Pullman-Standard builds cars for a wide variety of special uses, with specialized engineering knowledge and fabricating experience insuring sound construction and dependable performance. Shown here are examples of recent Pullman-Standard deliveries to leading railroads... *further* indications of Pullman-Standard's ability to answer every freight-car construction problem—and answer it *right.*

50-ton hopper car for the Great Northern.

Pulpwood car for Central of Georgia.

70-ton drop-end gondola for St. Louis-San Francisco.

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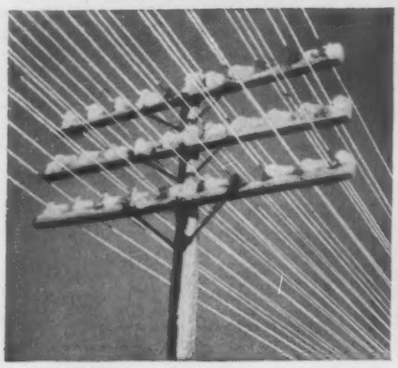
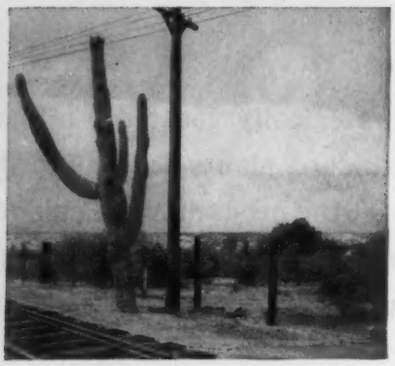
WHEREVER YOU USE WOOD..



IN THE NORTH, poles must resist the tremendous weight of frequent sleet storms. Avoid preservatives which *weaken* the wood. Barrett* Coal-Tar Creosote allows poles to retain their maximum strength, and helps to keep the poles at their best and hold the lines aloft.

IN THE SOUTH, prolonged high temperatures cause light-bodied preservatives to leach and evaporate from the wood rapidly, thus exposing the wood to termite attack and decay. Barrett Coal-Tar Creosote, heavier bodied and of lower volatility, prevents this condition. It stays in the wood longer under all conditions—doesn't "run out" on the job.



IN THE DESERT, crossties broom, shatter and split from extreme dryness and heat. Solutions made with Barrett Coal-Tar Creosote retard this, and also reduce mechanical wear of crossties through their lubricating action on the wood fibers. In poles, heavy treatment with Barrett Coal-Tar Creosote substantially reduces checking and splitting.

IN THE SWAMPS, forces of decay are almost at their maximum of destructive power. High moisture content and infection from other decaying wood and debris are ever-present menaces. Poles properly treated with Barrett Coal-Tar Creosote have survived under swamp conditions for years.

IN FRESH WATER, many preservatives leach out of wood. Barrett Coal-Tar Creosote resists this leaching action. Being only negligibly soluble in water, it is the preferred preservative for use on submerged wood structures, or those exposed to the powerful action of rapidly flowing water.

IN SALT WATER, marine wood-borers give a preservative its severest test. Of hundreds of preservatives that have been tried through the years, *Coal-Tar* Creosote is the only one that has proved consistently effective against teredos, limnoria and other salt-water enemies of wood.

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Only coal-tar creosote wood preservative has been used long enough and widely enough to have proved its effectiveness under all conditions.

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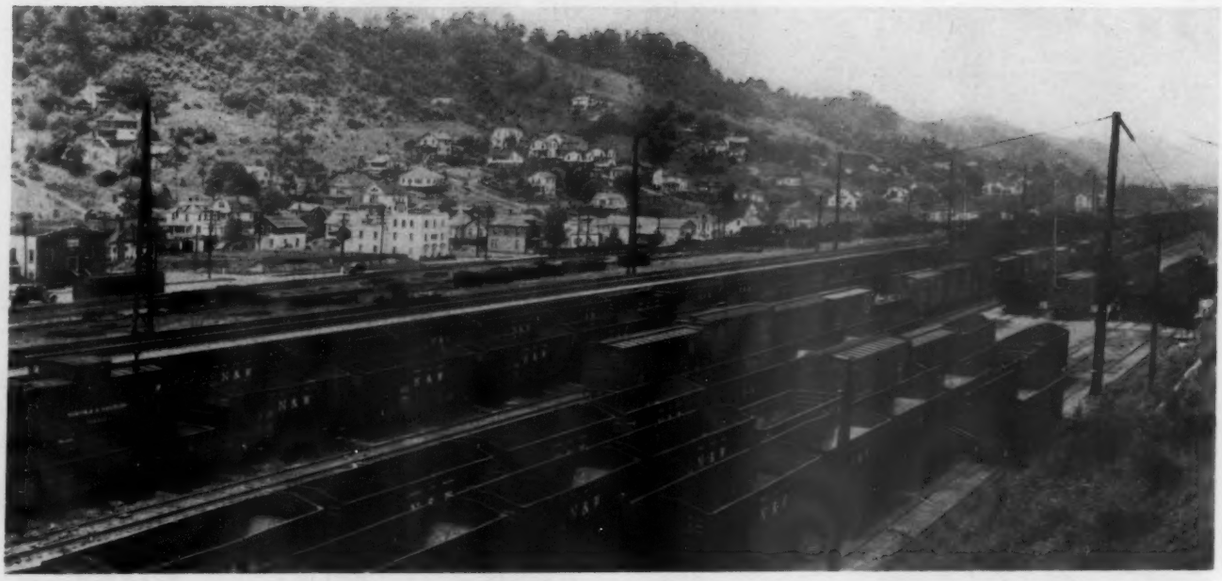

(Continued from page 51)

Modifications of Rules 3, 9, 17 and 101 were recommended, to provide charges and credits, proper substitutions, and other details, for the No. 18 brake beam which is now A.A.R. Standard.

Modification of Paragraph (1) of Rule 36 was recommended, to provide for more effective securement of advertisement banners, etc., thereby reducing the hazard of such signs or banners becoming loose and causing damage in transit.

With the concurrence of the Committee on Brakes and Brake Equipment, addition of a new Note 6 following Section (1) of Rule 60 was recommended, to provide for proper reconditioning or renewal of back cover of service portion of AB brake equipment.

Addition of a new note to the table under Paragraph 1 of Section B of Rule 112 was recommended, to provide settlement basis for caboose cars destroyed or badly damaged.

Modification of Notes 1 and 2 under Paragraph 8 of Section B of Rule 112 was recommended, to provide special settlement for subsequent renewals of special protective coatings or rubber linings of tank cars in the same manner as settlement for the initial application.

The committee also recommended that Paragraph 3 of Rule 16 be modified to clarify the intent; that Items 1 and 2 in the brake beam substitution table of Rule 17 be eliminated; that Item 14 of Rule 19 be modified to include I-section side frames and a new Item 19 added; that the captions in Figs. 2 and 3 of Rule 20 be modified; that the last paragraph of the 52nd item of Section B, Rule 23, be changed to include I-section side frames; that Interpretation 3, Rule 32, be modified to clarify the intent; that Rule 61, Section (a) be modified to insure proper maintenance of slack adjusters, and that Note 2 of the same rule be changed to coincide with the manual; that the second paragraph of Rule 74 and the third note following the table of Rule 86 be eliminated; and that modifications be made to Rule 98, Paragraph (c-2), Item 213 and Notes 2 and 5 following the table in Rule 101, and Section (m) of Rule 104.

The committee recommended the following changes in Passenger Car Rules:

Addition of new Section (h) to Rule 2, requiring the application of A.A.R. Standard Passenger Car Axles or Alternate Standard Tubular Axles to all passenger train cars built new or rebuilt on or after January 1, 1951, as a safety measure.

With the concurrence of the Committee on Lubrication of Cars and Locomotives, modification of Paragraph (2) of Section (1) of Rule 7 as it has been found that grease-lubricated journal roller bearings can be operated satisfactorily for a 90-day period.

With the concurrence of the Committee on Wheels, modification of Paragraph (f-13) and note following Rule 7, to discourage the application of Class C multiple-wear wrought-steel wheels in cars having braking on wheel treads. New Paragraph (j) (2) was added to this rule permitting cleaning of air brakes when the stenciling indicates they are due for cleaning within 30 days, whether car requires other repairs or not.

Paragraph (g) (2) of Rule 9 was changed to permit charging for fuel for internal combustion engines.

Members of the Arbitration Committee are J. A. Deppe (chairman), superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; G. E. McCoy (vice-chairman), assistant chief of car equipment, Canadian National; W. N. Messimer, general superintendent of equipment, Merchants Despatch Transportation Corporation; H. M. Wood, assistant chief of motive power (car), Pennsylvania; J. J. Root, vice-president, Union Tank Car Company; M. F. Covert, general superintendent equipment, General American Transportation Corporation; R. E. Baker, assistant general manager (mechanical), Boston & Maine; and R. D. Bryan, mechanical assistant, Atchison, Topeka & Santa Fe.

The report was accepted without discussion.

COUPLERS AND DRAFT GEARS

Couplers

Master Gages.—The committee recommends that a set of master gages designed by the Mechanical Committee of the Standard Coupler Manufacturers for checking for wear limits all standard maintenance and reclamation gages, and for checking tolerances on new gages, be submitted to letter ballot. If approved the gages will be available by purchase from any of the standard coupler manufacturers.

Reclaiming D Coupler Locks.—The committee recommends approval by letter ballot of the removal from Interchange Rule 23 and from Section L of the Manual, Page L-6, of the permission to reclaim and reinforce fractured

Type D lock legs by welding, which has been found uneconomical and undesirable from the standpoint of safety. The practice for reclaiming locks in these references will then be in harmony with that in Section C of the Manual, Page C-67.

Type E Shank Height Gages.—The Mechanical Committee of the Coupler Manufacturers has recommended, and this committee has approved, the "go" and "no go" gages for the control of the height of the shank of E couplers during manufacture. This is in accordance with letter ballot action last year revising the Fundamentals of Design in Section C of the Manual.

Type H Tightlock Interference.—Undesirable emergency brake applications are reported in freight trains hauled by Diesel-electric locomotives which have tightlock couplers. The cause is interference of the lower interlocking lug of the aligning wing pocket of the tightlock coupler with the air hose on the freight car below the angle-cock nipple. The Mechanical Committee of the Standard Coupler Manufacturers is considering design changes for new couplers to eliminate the interference and a procedure for modifying existing couplers.

Type F Freight Coupler.—The report announces the completion of the new interlocking coupler for freight service on the development of which the committee, the Car Construction Committee and the Mechanical Committee of the Standard Coupler Manufacturers have collaborated. The advantages are cited as follows: Complete vertical interlocking of mating coupler heads which resists jackknifing and overturning in derailment; a minimum of free contour slack; longer contour life because of restricted vertical movement between mated couplers; increased strength; no slip-overs; and mated conventional coupler prevented from dropping to the rail in case of a pull-out. The Type F coupler is provided with key slots for the present standard horizontal draft key; this facilitates temporary repairs with a standard rigid-shank Type E coupler and facilitates the application of the Type F coupler to new or rebuilt cars of standard construction. Six car sets have been applied; 10 more are on order; 250 car sets were authorized last year for trial service. The committee recommends trial applications.

Pitt Type Coupler.—The committee is assembling information looking to the early prohibition of the operation of these couplers in interchange passenger-train service. Its attention has been called to numerous break-in-twos because of the failure of couplers of this type, which are not more than 50 per cent as strong as the Type E and not more than 40 per cent as strong as the tightlock coupler.

Progress Reports.—Pusher tests simulating conditions under which derailments have occurred on the Pennsylvania when empty cars with swivel-shank couplers and swivel yokes or with swivel-shank couplers with swivel butts and Farlow two-key yokes are used in heavy pusher service have been completed.

Internal redesign of the vertical guard arm of the Type H tightlock coupler has been made by the Mechanical Committee of the Standard Coupler Manufacturers to overcome vertical spreading of the guard arm to a degree that prevents intercoupling with another Type H. No weight has been added. Laboratory tests of the new design are in progress.

Draft Gears

Certified Draft Gears.—During the year no additions have been made to the list of certified draft gears. Two new gears have been submitted for approval, one by a manufacturer who now holds a certificate for one gear and one by a manufacturer to whom no certificate of approval has been issued to date.

Check Tests of New Canadian Gears.—Specification tests of new draft gears manufactured in Canada disclosed some improvement in the manufacture of gears to which exceptions were taken as the result of the findings of the check tests made in 1944-45. Some deficiencies still exist and these are being called to the attention of the manufacturers concerned. A complete report is being submitted to the Canadian member roads.

Check Tests After Service.—Detail results of check tests of certified draft gears removed from service after 5 and 12 years, now completed, are set forth in an appendix to the report. Tests of National type M-50B have been deferred because of the difficulty of obtaining specimens.

Waugh Twin-Cushion Tests.—The rubber elements of this gear were allowed to stand under constant compression in open air for a two-year period protected from the weather about as in a stored freight car. At the conclusion of this period the capacity and other characteristics of the gear were found by laboratory test to be practically the same as new.

Measurement of Draft-Gear Reaction.—Agreement has been reached among the draft gear manufacturers to cooperate in a series of exploratory tests at the A. A. R. laboratory for the purpose of broadening the scope of the experiments conducted by the Edgewater Steel Company in cooperation with Purdue University at the A.A.R. Laboratory to find a simpler method of measuring draft-gear reaction than by double differentiation of chronograph curves. The Edgewater Steel experiments were referred to in the 1948 report of the committee.

Short Draft Gears in Special Cars.—The committee calls attention to the omission of a stipulation that the requirement that short draft gears for ore cars must be submitted to the Committee on Couplers and Draft Gears for approval before such cars are permitted in interchange was to apply only to new or rebuilt cars, effective January 1, 1950. This was omitted from the third note to Paragraph (d) (1) of Interchange Rule 3.

Specification Change. — Specifications for approved draft gears for freight service require that test specimens be selected from a lot of 50 gears to insure that these specimens are representative of the average commercial product. In manufacturing 50 specimens the manufacturer does not usually make metal patterns but waits until a certificate of approval has been issued. The castings for the

(Continued on page 61)

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BITUMINOUS COAL

BITUMINOUS COAL INSTITUTE

A DEPARTMENT OF NATIONAL COAL ASSOCIATION

WASHINGTON, D. C.

(Continued from page 58)

test gears are made from wooden patterns and often require extensive grinding to fit production gages. It is questionable whether castings produced from metal patterns with minimum grinding would fit as well as the specially handled pieces in the test specimens. As a further safeguard it is recommended that Paragraph 16 in Appendix A of Specification M-901 be revised to provide for an additional check of gear performance at some time near the end of the two-year service period under conditional certificate of approval, using gears from the regular production line, before the conditional restrictions are removed.

Duryea Underframes.—Car impact tests made in 1929 and 1931 showed the Duryea cushion underframe provided a good cushion for the car body against forces resulting from the impact of single cars, but that performance became less favorable as the number of cars increased. Comparative tests with trains of at least 100 cars and preferably 150 cars each were recommended by the Committee on Couplers and Draft Gears and by a joint Subcommittee on Draft-Gear Tests during 1931 to 1935, but these tests were never authorized. During the past year a series of yard tests using two trains of 100 cars each, one equipped with certified draft gears and the other with Duryea cushion underframes was proposed. The Subcommittee on Draft Gears has now been instructed by the General Committee to submit a detailed program for the tests and an estimate of cost. It is essential that the cars equipped with Duryea underframes and those equipped with friction draft gears otherwise be of identical construction and substantially the same age.

The members of the committee are H. W. Faus (chairman), engineer locomotive equipment, New York Central system; C. K. Steins (vice-chairman), mechanical engineer, Pennsylvania; F. T. James, general superintendent motive power and equipment, Delaware, Lackawanna & Western; N. T. Olsen, chief mechanical engineer, Chicago & North Western; B. Faughnan, assistant works manager, Angus shops, Canadian Pacific; J. W. Hawthorne, general superintendent motive power and equipment, Atlantic Coast Line; I. N. Moseley, research and test engineer, Norfolk & Western; A. W. Maydahl, engineer car maintenance, Union Pacific; A. B. Lawson, mechanical engineer, Baltimore & Ohio; and L. R. Schuster, engineer car construction, Southern Pacific.

K. L. Selby, chairman, Mechanical Committee of Standard Coupler Manufacturers, urged member roads to apply a few Type H tightlock couplers to freight cars as past experience has indicated that some problems arise with new equipment and experience with the trial installations will be of value in handling large numbers. A pamphlet is available to railroads contemplating trial applications giving full directions.

The report was accepted and recommendations referred to letter ballot.

BRAKES AND BRAKE EQUIPMENT

Condemning Gages for Used 1⅜-in. Hose Fittings.—The committee recommends for letter ballot action that the dimension of the "go" side of the gage used for condemning used 1⅜-in. air-hose fittings, as shown on Manual page B-50A and B-50B, be changed to conform to that of the new fitting gage shown on Manual page B-52, to prevent condemning new fittings with the used fitting gage.

Hose Label and Bolting Clamps.—A new plate to be substituted for page E-17 of the Manual is proposed for letter-ballot consideration, to clarify the location of the clamp bolting lugs and to show the coupling turned in the hose from the position now shown, so that the date on the hose label will be in position to be more readily identified when the hose is applied to the car. If adopted, suitable changes in Interchange Rule 57 are requested.

Freight-Car Slack Adjusters.—The committee is closely watching the development of automatic slack adjusters for freight cars and the tests of the various designs. It favors this development and proposes that, when satisfactory adjusters are developed, they eventually be made recommended practice for all freight cars. An addition to Interchange Rule 61 (a) is recommended to insure proper maintenance of all types of slack adjusters.

Gages for AB Valves.—Difficulty has been experienced in the use of the gages listed on Manual pages B-20G and B-20I because they do not enter their respective bushings far enough to permit gaging the point of greatest wear. They should only be used to determine the size of rings after the bushings have been trued up. Changes in the names to conform to this use on page B-20G are recommended for letter-ballot consideration, along with the omission of one gage from page B-20I.

Passenger Retaining Valves.—Letter-ballot action is recommended on the proposed addition of lines to the tables on Manual page E-27 showing the proper size of orifice in the valve of passenger-car retainers used with HSC brake equipment.

Leakage on Freight Brake Systems.—The committee cites several circular letters issued in 1948 to 1950, inclusive, on difficulties with excessive freight brake-system leakage. It makes these further recommendations:

(a) That Interchange Rule 60 be modified, effective August 1, 1950, to require that all back covers of service portions of AB valves be reconditioned with manufacturers' reconditioning die or new design covers applied when brakes receive periodic attention.

(b) It was necessary to redesign the emergency ball-check cover by adding a shroud around it to hold the gasket in place.

(c) That Rule 60 be modified, by letter-ballot action, effective January 1, 1951, to require that the new style cover be applied when the AB valves receive periodic attention.

(d) Service tests are being conducted on new gasket designs to provide a better seal in the gasket groove of hose couplings.

(e) That there be complete compliance with Rule 101 of the Rules for Maintenance of Air Brake and Air Signal Equipment if brake system leakage is to be reduced.

Manual Revisions.—Revisions of Manual pages E-11, E-12 and E-13, Air Brakes, General Arrangement and Details—Standard, and pages E-15 and E-16, Air Brakes, General Arrangement and Details—Recommended Practice, are proposed. These involve some additional material, the removal of some material now in the existing pages, and considerable rearrangement and consolidation. Some items are advanced from Recommended Practice to Standard.

Information and Work in Progress

Revisions of the Test Code for Single Cars have been completed and Instruction Pamphlet No. 5039-4, Supplement 1, is ready for distribution by the air-brake manufacturers.

Improved ABLC brake equipment with compensating valve and brake-cylinder sealed has been installed on 398 of the 400 Illinois Central cars which have the load compensating brake. To date, no difficulties have been reported.

Revision of the Rules governing the maintenance of train and air-brake signal equipment is being actively progressed with the Interstate Commerce Commission, Bureau of Safety.

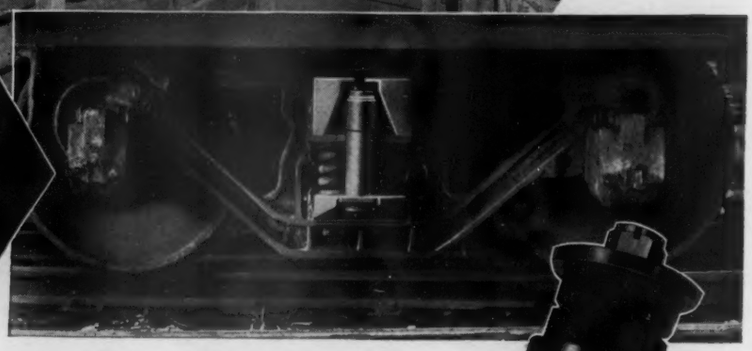
The operation of devices for checking electric circuits on trains with electro-pneumatic brakes is under way looking toward preparation of a progress report.

Revision of A.A.R. Specification 2518—Installation of AB Freight Brake Equipment will soon be completed, after which copies can be procured from the air-brake manufacturers.

The committee recommends that all freight cars offered in interchange equipped with special quick-changing type

MONROE STOPS LADING DAMAGE

AT THE SOURCE



MONROE Hydraulic Shock Absorbers PROTECT Lading . . . Cars . . . Roadbed

● Jars and jolts begin in roadbed and trackage. If they are to be arrested before reaching cars and lading, road shocks must be cushioned out in car trucks—*at the source.*

By controlling spring action, on cars and trucks, Monroe Hydraulic Shock Absorbers stop damaging jolts. Monroe-equipped cars help prevent lading damage, reducing costly claims. When ordering new cars or modernizing existing equipment, specify Monroe Shock Absorbers—a sound investment in reduced operating expenses and improved customer goodwill.

Monroe also builds ride control equipment for passenger cars, locomotives and other rolling stock.

PRECISION-MADE TO LAST

Monroe Shock Absorber Service Agencies in these 12 leading Cities

BOSTON—Harvey Sales & Service Co., 1375 Boylston St.
BUFFALO—Battery & Starter Co., 2505 Main St.
CHICAGO—Illinois Auto Electric Co., 2011-37 Indiana Ave.
CINCINNATI—Tri-State Distributor Corp., 8th & Broadway
CLEVELAND—Electric Power Maint. Co., Prospect & E. 30th.
DETROIT—Knorr-Maynard, Inc., 5743 Woodward Ave.
JACKSONVILLE, FLA.—Spencer Auto Electric, Inc., 40 W. Beaver.
NEW YORK—The Durham Co., 17 W. 60th St.
PHILADELPHIA—Motor Ignition Co., 1526-28 Fairmount Ave.
PITTSBURGH—Service Sales of Pittsburgh, 4725 Centre Ave.
WASHINGTON, D.C.—Roberts Brothers Co., 17th & U St. N.W.
TORONTO, ONT.—Parmaco Products, Ltd., 71 Front St. E.

MONROE AUTO EQUIPMENT CO.
Monroe, Mich. – World's Largest Maker of Ride Control Products

brake-cylinder release valve be of the new QRR type with check valve to connect to the retainer pipe.

The members of the committee are J. P. Lantelme (chairman), general foreman, Pennsylvania; H. I. Tramblie (vice-chairman), air-brake engineer, Chicago, Burlington & Quincy; R. J. Dewsbury, general air-brake inspector, Chesapeake district, Chesapeake & Ohio; R. N. Booker, general air-brake inspector, Southern Pacific; W. D. Bowser, engineer air brakes and train-control design, Union Pacific; D. R. Collins, superintendent air brakes, Denver & Rio Grande Western; F. T. McClure, supervisor air brakes, Atchison, Topeka & Santa Fe; A. J. Pichetto, general air-brake engineer, Illinois Central; L. D. Hays, engineer brake equipment, New York Central system; R. G. Webb, superintendent air brakes, Chicago, Milwaukee, St. Paul & Pacific; and C. C. Maynard, chief inspector air brakes, Canadian National.

Discussion

The discussion was almost entirely directed to the subject of brake-system leakage on freight cars and, particularly, to the importance of renewing certain gaskets in AB brake valves at periodic cleaning dates. This was started by representatives of northern roads, on which winters are severe: R. E. Baker, assistant general manager, Boston & Maine; R. G. Webb, superintendent air brakes, Chicago, Milwaukee, St. Paul & Pacific, and F. G. Moody, superintendent car department, Northern Pacific. All three stressed the importance of strict adherence to the committee's recommendations and to Rule 101 of the Rules for Maintenance of Air Brake and Air Signal Equipment. When roads in other territories fail to carry out these instructions, they are making it difficult for the northern roads to operate during severe cold weather. If all roads made the in-date tests called for whenever cars are on repair tracks and brake-system leakage were reduced to 2 lb. per min., the situation would be greatly improved.

Mr. Webb said that the warping of AB covers was the result of boiling and reusing gaskets, when new ones were difficult to get during the war, until the gaskets became hard and attempts to make them tight distorted the covers. Mr. Moody hoped the replacement of present ball check and service back covers would be made mandatory. He felt that if it was necessary to use the wrench frequently to keep the covers tight, the labor for repairing the present covers would be wasted. It was pointed out by H. I. Tramblie, air brake engineer, Chicago, Burlington & Quincy, that not all leakage is at the AB valve and it is necessary to reduce leaks on cars in service. For this purpose C. B. & Q. inspectors and repairmen have a special wrench which covers the sizes of bolts and connections in the air-brake system, so that leaks can be corrected immediately they are found.

F. K. Mitchell, manager equipment, New York Central system, said the railroads had invested half a billion dollars in AB brake equipment and that the equipment is not satisfactory. Now, he said, the manufacturers furnish tools to restore AB valve covers so that they can warp all over again. In his opinion the manufacturer should furnish replacement parts without cost to the railroads. A. G. Galloway, general superintendent motive power and equipment, Baltimore & Ohio, supported this view, saying that, if the manufacturers could not get suitable materials during the war, they should have discontinued furnishing AB brakes. Not having done this, he thought they should share responsibility for the present situation.

C. D. Stewart, vice-president (engineering), Westinghouse Air Brake Company, called upon to answer, said that this was a highly controversial question on which he hoped the railroads and the manufacturers might get together in a sincere effort to arrive at a fair conclusion. In defense of the brake companies, he cited the fact that no damage to AB valve covers was experienced for the first eleven or twelve years after the AB brake was made mandatory in 1933, and that during this period, up to January 1, 1942, approximately one-half of the freight cars were equipped with the AB brake. Gaskets that are thirteen or fourteen years old, he said, had been found still in service in AB valves. During the war, he said, it became impossible to get rubber for gaskets and time has proved that the synthetic rubber used is not as resilient as the natural rubber. He recalled that the period between servicing of K triple valves was thirteen and fifteen months, while the AB valves go for three years, and if gaskets are good at the end of two or three periods, they will be nine or twelve years old before being removed, unless they fail. The service back cover, he said, was considered strong enough, but it was later decided to stiffen it, even though there were a return to rubber gaskets.

He cited an instance at Mandan, N. D., last January, at 20 deg. below zero, indicating that AB valves are not the only source of leakage, when, by tightening hose and angle cocks and renewing gaskets in hose coupling, the caboose brake-pipe pressure at the end of an 80-car train was raised to within 5 lb. of that on the locomotive.

The report was accepted and submitted to letter ballot.

LOADING RULES

Soon after the start of World War II shippers in general, and particularly the basic industries, became extremely conscious of the importance of following the published loading rules for commodities loaded on open-top cars in order to insure prompt and safe delivery of their shipments. However, objections were raised as to the large size of the rule book, making it unhandy to carry. Further, they pointed out that it contained loading methods for commodities in which individual shippers in many cases had no interest.

Claims had been made by various groups of shippers that loading rules would receive much wider distribution among the shippers if they were published in pamphlet form. The A.A.R. was at the time publishing separate pamphlets for War Department vehicles, ordnance materiel, machinery, and other items. These pamphlets were widely distributed and met with instant favor.

One group of shippers, in an effort to avoid ordering the large size Loading Rules book, started to publish, in a pamphlet of their own, only such of the rules as were applicable to their industry. This has met with great favor among these shippers.

Periodically, requests have been received by the A.A.R. to change the policy and arrange to publish the loading rules in pamphlet form. Because of the additional costs involved, the association has heretofore hesitated to make such a change. It has now come to the point, however, where similar demands have been filed and, in order to satisfy the various groups of shippers and at the same time assure a wider distribution, all future loading rules will be issued in pamphlet form.

Final agreement has now been reached with the shippers, and the first of the new pamphlets containing a complete set of rules for the loading of Grading and Road Making Machinery was issued in February of this year. The second of the series, covering Steel Products (excluding pipe) is nearing completion and will be issued in July of this year. Additional pamphlets now being progressed and covering the following commodities will be issued as soon as possible: wrought iron and steel pipe; forest products; machinery; miscellaneous commodities; farm equipment machinery.

The report on revisions of the rules is in two parts. Section A contains all completed items scheduled for inclusion in the rules, and Section B, the subjects still under consideration.

Section A.—*General rules:* Changes in Rules 10, 15 and 19-A.

Lumber, poles, logs, etc.: Nine specifications revised, including one drawing.

Flat rolled steel: Two specifications revised.

Coil sheet steel: Two specifications revised.

Wrought iron and steel pipe, boilers and tanks: Twelve

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"Lima-Hamilton switchers have
thoroughly satisfied our railroad
in doing the job expected of them . . . "

***says the* TOLEDO, PEORIA AND WESTERN**

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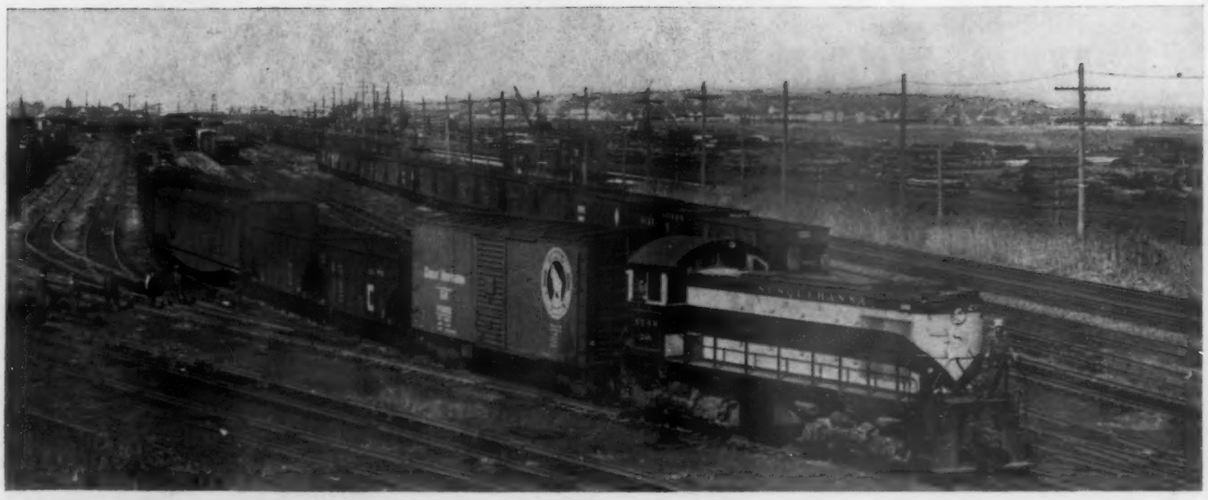


specifications, including three drawings, revised. Four new specifications and drawings developed. Two drawings deleted.

Mounted wheels: One revised specification and drawing.

Crawlers, tractors and road rollers: Seven revised specifications, including four revised drawings; two new specifications and drawings, and two drawings deleted.

The reasons for the changes were predominantly to satisfy shippers; 26 changes were made at the request of shippers, eight to clarify the intent of the rules, and four to increase safety.

Section B.—Approximately 26 subjects are still under consideration, some of which will require only revisions in the present specifications and figures, while others will require the formulation of new specifications and figures.

The preparation of specifications and drawings to be included in the pamphlets for Forest Products; Steel; Pipe; and Farm Equipment Machinery is under way. The revision of the Machinery Supplement is being held in abeyance pending a joint conference with the Operating-Transportation Division to coordinate certain details pertaining both to open and closed car loading.

The members of the committee are M. B. Moir (chairman), chief car inspector, Pennsylvania; H. H. Golden (vice-chairman), supervisor A.A.R. Interchange & Accounting, Louisville & Nashville; T. W. Carr, assistant to superintendent of equipment, Pittsburgh & Lake Erie; A. H. Keys, superintendent car department, Baltimore & Ohio; H. S. Keppelman, superintendent car department, Reading; F. A. Shoulty, assistant superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; H. J. Oliver, assistant superintendent motive power, Detroit, Toledo & Ironton; G. R. Andersen, superintendent car department, Chicago & North Western; L. T. Donovan, assistant to executive vice-chairman, Mechanical Division, A.A.R.; H. L. Hewing, superintendent interchange, Chicago Car Interchange Bureau; N. A. Williams, assistant engineer freight-car design, Union Pacific; and L. F. Delventhal, Jr., transportation inspector, Western Pacific.

Discussion

E. G. Plowman, vice-president, traffic, United States Steel Corporation, in a prepared discussion, commented on the tremendous progress which has been made during the last two years toward greater safety and more effectively competitive loading methods. Working together, the Loading Rules Committee and the shippers are coming to a better understanding of mutual problems. He cited the fact that over half the drawings and specifications of the Loading Rules deal with steel or steel pipe as indicative of the importance of this cooperation between the railroads and the steel industry. He commended the pamphlet form which the rules will take when they are reissued.

He commented favorably on the trend toward the development of methods of loading which produce floating loads. Such loads, he said, are practical and effective, while rigid loads are being made obsolete by present freight-train speeds. He said the cushion underframe of the type employed in the General American-Evans car, which is to be further tested by the Mechanical Division, is worthy of study as a possible answer to this problem. Trucks, he reminded his audience, now in effect provide a floating load on the highway.

In closing, Chairman Moir said changes in the rules during the coming year would look toward reducing the expense to the shipper.

The report was accepted.

CAR CONSTRUCTION

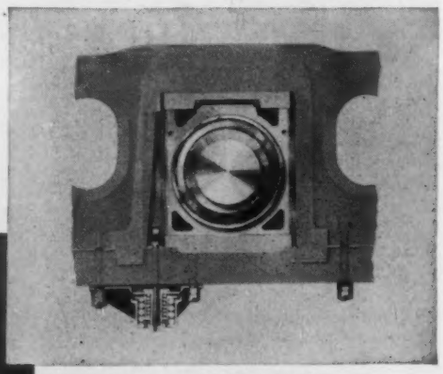
Each year since 1936, the committee has made a statement of freight cars ordered during the preceding year. Sufficient detail is given in these statements to indicate the extent to which the members were following A.A.R. standardization for these cars.

[The committee here included three tables showing that, of 24,350 new house and hopper cars ordered, May 1, 1949, to April 30, 1950, all were A.A.R. design throughout or conforming thereto, including lightweight alloy steel to A.A.R. base dimensions and inside dimensions to meet specific conditions. Of 730 40-ton freight refrigerator cars, 100 were not A.A.R. standard. No standard designs of gondola, flat, stock, refrigerator (50 ton and 70 ton) and special cars have been requested or produced, but a truck center plate height of 25¾ in. has been largely adhered to. The report showed that of 31,781 of these cars, 93.92 per cent have 25¾ in. center plate height, the balance of the cars having this dimension ranging between 25 in. and 28½ in. The committee reviewed four new designs of freight cars during the year in accordance with I.C.C. Rule 3 and approved them for interchange service as follows: box car for use as a mobile battery-charging substation, Greenville Steel Car Company; car structure, including anchorage for 16,000 imperial gallon tanks and contents, Canadian Pacific; reinforced underframe on car designed for transporting 15 one-ton containers, American Car & Foundry Co.; underframe for TL-type tank car reinforced for the mounting of an existing tank built in 1929, North American Car Corporation.—EDITOR.]

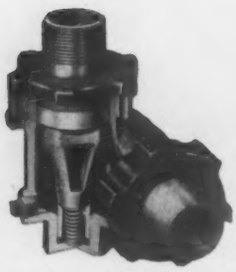
As stated in the 1948 report, prints and specifications

use Franklin parts on Franklin devices

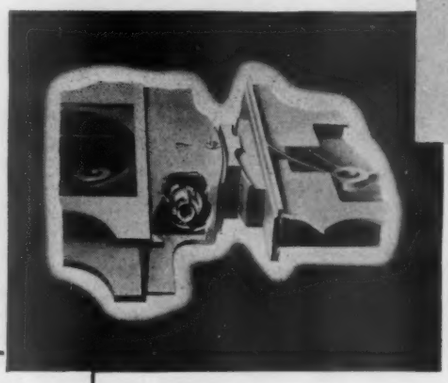
In order to obtain full efficiency from your Franklin devices, specify genuine Franklin parts in replacement. Franklin devices will always perform best when equipped with genuine Franklin parts made to interchangeable tolerances and of the correct materials.



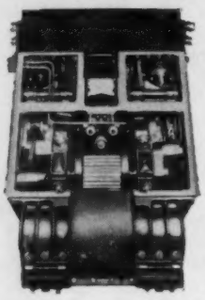
Automatic Compensators & Snubbers



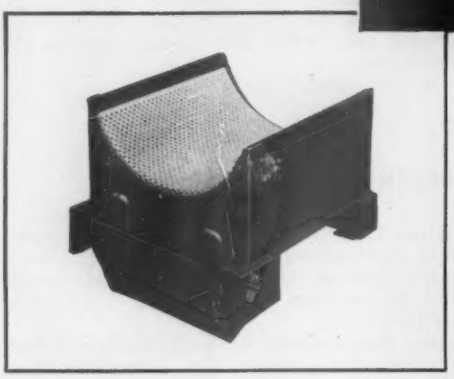
Sleeve Joints



Radial Buffers



The Locomotive Booster



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STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
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for designs of new cars developed by various car builders, which vary to some extent from conventional designs but not to the extent they would be classified as "Untried Types" under Interchange Rule 3, should be submitted to the secretary for inclusion in his files as a matter of record.

In such cases it is not necessary to submit approval applications to the committee, nor is the builder required to obtain A.A.R. approval of the car design before starting construction, it being understood the car owner will be held responsible for compliance with Interchange Rule 3 and safety appliance requirements.

Each railroad should request car builders having orders for its cars which vary from, but are based on, conventional design to submit one set of prints and specifications to the secretary for his file, who will notify the committee upon receipt thereof. In this connection, it is respectfully requested that the letter of transmittal briefly state what the deviations are on a specific lot of cars from the conventional designs.

Subsequent to the 1949 report, the committee reports submission of 500 Missouri-Kansas-Texas 70-ton hopper cars, series 35001-35500, made of open-hearth steel, welded construction with extended ends, welded strikes and bolster center filler; also 500 Northern Pacific 70-ton hopper cars, series 71000-71499, of A.A.R. conventional design except welded instead of riveted construction.

Some time ago complaints were made by certain shippers' organizations with respect to losses in stock shipped in stock cars, allegedly due to the vertical space restrictions in the lower and upper decks of present designs of stock cars.

This matter was extensively investigated and a survey made to determine the best possible design of stock car which would eliminate loss and damage from such causes.

It will be noted that present inside height of stock car specified in Plate 103 of Supplement to the Manual of Standard and Recommended Practice is 8 ft. 7½ in. A revised drawing has been prepared involving changes in dimensions for stock car, bringing the important dimensions in line with those for A.A.R. standard box car design.

The inside height at eaves has been increased to 10 ft. and the distance over strikers as well as the distance between truck centers is changed to coincide with similar dimensions for the A.A.R. standard box car.

[The committee here discussed at some length important work of the A.A.R. Refrigerator Car Research Bureau which now has under preparation seven reports on the following subjects: pallets, trucks, doors, floor racks, floor construction, loading and bracing, and platform clearances. —EDITOR.]

Future designs of cars providing for insulation must be approached either with the intention of preventing water vapor from entering the car structures, or if it is allowed to enter, to make provision for its easy transmission to either the inside or outside of the car where the water vapors may be condensed and drained away. Due to this condition and the delay promise of a solution to these problems, until the spring of 1952 it would not seem to be practical to attempt the further standardization of the refrigerator car until that time.

At a joint committee meeting of the two supervising committees of the Refrigerator Car Research Bureau held on April 20 and 21, 1950, the following activities were outlined for 1950:

Two standing tests, one at New Orleans, La., and one at San Bernardino, Cal., will be made on a number of test cars using salt on the ice in various proportions both in cars with and without air circulation. The results of these studies will be applied to revise ice and salt methods now used in the transportation of frozen foods. Two transcontinental trips will be run using the new salt-and-ice proportions in an effort to lower commodity temperatures in transit.

One transcontinental trip will be run using various types of forced air circulation in refrigerator cars so as to determine the best method now available.

One transcontinental trip will be organized and run on fresh fruit to determine if certain icing stations can be eliminated without sacrificing the service.

Considerable time will be devoted to making a large number of short test runs between Chicago and New York accumulating data on the possible revision of icing rules looking towards sufficient ice in bunkers to protect commodities at destination. Suggestions on operating tests relative to ventilation and heater service with the associated problems were deferred until the next joint committee meeting to be held in October of this year.

The Refrigerator Car Research Bureau now has a laboratory in which most of the technical equipment is stored. This facility will provide for the maintenance and calibration of the instruments used by the Refrigerator Car Research Bureau in field tests. The bureau is consulting with car line traffic representatives in an effort to prepare exhibits and testimony in defense of the ability of the lighter than heavily insulated cars to adequately protect frozen foods in transit.

[This part of the report, presented by subcommittee Chairman R. D. Bryan, was followed by a discussion of steel-sheathed box-car designs, particularly alternate constructions which will provide a car as satisfactory generally as the present A.A.R. standard design and in some cases give added strength. Necessary drawings were submitted for addition to the Manual. This part of the report was presented by R. H. Graff. J. R. Jackson reported on the progress in testing trucks for high-speed freight service; also on side-frames, bolsters and helical springs.—EDITOR.]

Retainer Ribs in Journal Boxes

Application of integral waste retainer ribs was adopted as standard practice by letter ballot in 1943 and journal box drawings in the Manual were revised to incorporate the waste retainer ribs and notation added to indicate they were standard practice.

Integral type waste retainer ribs have helped to a considerable extent to keep the packing in position and prevent it from working up under the journal bearings. Several types of waste retaining devices in the nature of springs that can be readily inserted in journal boxes not having the integral waste retainer rib have been developed. Experience indicates that a far greater protection is provided with the spring-type waste retainers.

The spring-type waste retainer cannot be satisfactorily installed in journal boxes having waste retainer ribs, and in order to properly utilize the spring device it is necessary to remove the integral type waste retainer ribs.

Since an increasing number of member roads are extensively using the spring-type waste retainer devices, the present standard integral type waste retainer ribs should be approved as an alternate standard rather than standard.

(This part of the report was signed by J. McMullen, subcommittee chairman.)

Subcommittee on Brake Beams

Up to the time this report was written, the following brake beam manufacturers have received certificate of approval from the A.A.R. covering brake beams which they submitted for test in the laboratory under the supervision of the A.A.R., and which were found to meet the latest A.A.R. specification for No. 18 beams: Davis Brake Beam Company, Beam No. 106; Buffalo Brake Beam Company, Beam No. 504; Chicago Railway Equipment Company, Beam No. 102; American Steel Foundries, Beam Nos. 501 and 503; Chicago Malleable Castings Company, Beam No. 102; Dominion Foundries & Steel, Ltd., Beam No. 503; Canadian Car & Foundry Co., Beam No. 102.

Road service tests which were started in 1947 on the 8 different types of brake beams submitted by brake beam manufacturers versus A.A.R. No. 3 brake beam, are still being followed.

[The report here showed progress in A.A.R. road tests of brake beams. It also contained important recommendations regarding brake beam gages. It was presented by L. H. Kueck, subcommittee chairman.

The report also contained a tabulated statement and an-

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The lid face of the NATIONAL Journal Box is machined to a true, smooth, seating surface, to assure dust-proof, oil-tight fit for the lid when closed. This means greater protection for the vital journal bearing surface.

The all-around, dependable performance of NATIONAL Journal Boxes results from basically sound design, precision production and strict adherence to all A. A. R. tolerances.

Especially important features of the single and double pedestal types include:

1. Made of cast steel, permitting welding of hardened wear plates, easily renewed when necessary.
2. Optional use of spring steel wear plates for extra hard wear and long life.
3. Hinge lug bushings and wear plates.
4. NACO Steel equalizer seat insert.

Where variations from the single or double pedestal types are desired, the great variety of NATIONAL patterns meets most requirements.

Whatever your journal box needs—you can depend upon NATIONAL for protection and performance.

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alysis of A.A.R. Z-section center sill failures, as reported by 33 railroads and four refrigerator car companies; recommendations regarding the repair of tank car tanks, cast iron reservoir lugs, non-integral journal boxes and metral running boards by welding. It recommended an additional stock car designation, as follows: SA—Stock Car. A car for transportation of stock on the hoof (except horses and mules), equipped with roof, slatted sides and side doors and fixed double deck located sufficiently high to permit the loading of cattle on the lower deck. With or without feed and water troughs.—EDITOR.]

Letter Ballot Items

The following recommendations contained in this report are submitted for adoption by letter ballot of the members: That—

(1) Plate 103 in the Supplement to the Manual of Standard and Recommended Practice be revised to provide for a design of double deck stock car with greater cubic capacity, per drawing submitted.

(2) The present caption on Manual pages D-14 and D-15 be modified so as to change the waste retainer rib in journal boxes which was adopted in 1943 as standard, to alternate standard.

(3) The following items under Section B of the Fusion Welding and Bronze Welding Limits and Regulations shown in Section L of the Manual be modified as indicated below:

(a) To permit no welding of cracks or fractures on tanks of riveted construction, but to permit welded repairs to tanks of welded construction under certain conditions.

(b) To permit welding of lugs of cast iron air brake reservoirs.

(c) To prohibit welding of Farlow cheek plates where section is broken out between key slots.

(d) To provide welding regulations for non-integral types of journal boxes based on the kind of metal of which constructed: cast steel, malleable iron, or cast iron.

(4) An additional A.A.R. Mechanical Designation be added to stock car types on Manual page L-16 to provide for a stock car with upper deck high enough to permit the loading of cattle on the lower deck without difficulty.

The report was signed by L. H. Kueck (chairman), assistant chief mechanical officer, Missouri Pacific; J. A. Gower (vice-chairman), assistant mechanical engineer, Pennsylvania; R. B. Winship, mechanical engineer, Canadian Pacific; J. McMullen, consulting engineer, Erie; R. D. Bryan, mechanical assistant, Atchison, Topeka & Santa Fe; R. H. Graff, assistant engineer, car equipment, New York Central; F. J. Herter, engineer car construction, Chesapeake & Ohio; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; L. R. Schuster, engineer car construction, Southern Pacific; M. C. Haber, general mechanical engineer, Union Pacific; F. G. Moody, superintendent car department, Northern Pacific; and K. H. Carpenter, superintendent car department, Delaware, Lackawanna & Western.

Discussion

N. T. Olson, chief mechanical engineer, Chicago & North Western, called attention to a number of details of car construction, differing slightly from A.A.R. standard construction and said, for example, that excellent results have been secured on this road during the last 13 years with 8,900 cars which have the long leg of the side sill angles horizontal instead of vertical; also utilizing enlarged gussets at door posts and side sills having the diagonal edges of gussets flanged; also having the heel of side sill reinforcements scarfed and welded for a distance of 12 in. on each side of each door post. He suggested that a coating of protective material be applied over the underframes of stock cars to give increased service life.

The report was accepted and recommendations referred to letter ballot.

LUMBER LOADING

The special committee has approved revisions in Fig. 6 of the Loading Rules pertaining to the fastening of loads of packaged lumber.

Difficulty from shifting has been experienced with shipments of packaged lumber on open-top cars which did not comply with all of the requirements of Figs. 6, 6A and 6B.

Experimental shipments of packaged lumber have been moving from points in the South to various destinations in good condition. There are no objections on the part of the committee to shipping packaged lumber under new methods of loading on an experimental basis. The committee welcomes the opportunity to conduct or authorize further tests of packaged lumber on open-top cars.

Where facilities for loading and unloading are available, packaged loading greatly facilitates the operation. It is hoped that specifications and drawings for one or two methods of loading packaged lumber can soon be incorporated in the rules.

The committee members are F. A. Shoulty (chairman), assistant superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; N. A. Williams, assistant engineer, freight-car design, Union Pacific; G. R. Andersen, super-

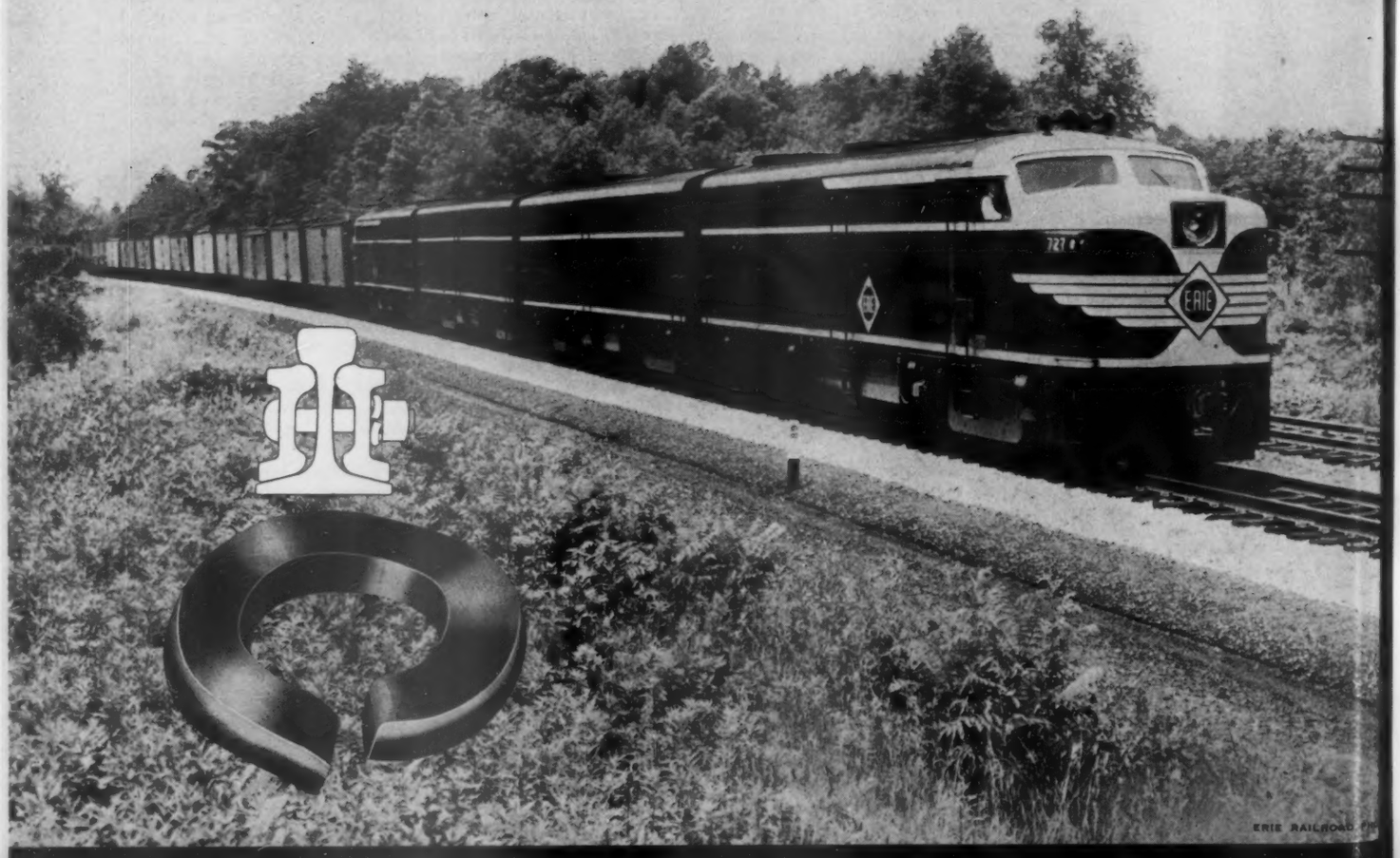
Mr. Railroad Man, rest your eyes on this beautifully laid track. It's as handsome as the well-known red carpet laid out for royalty.

And it's all done for fine freights and fast passenger trains; and for comfortable and easy riding; and for *economy in maintenance.*

Far sighted executives specify the railway spring washers of *great reserve power*—spring washers that are *more* than powerful enough to absorb tremendous shocks and stresses; to insure resilient joints; to equalize bolt tensions, and to protect rail ends. Yes—

IMPROVED HIPOWERS

IMPROVE TRACK



ERIE RAILROAD

THE NATIONAL LOCK WASHER COMPANY, NEWARK 5, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS

intendent car department, Chicago & North Western; G. J. Lehnerer, superintendent car department, Illinois Central; L. E. Day, district master car repairer, Southern Pacific; F. G. Moody, superintendent car department, Northern Pacific; and L. T. Donovan, assistant to executive vice-chairman, Mechanical Division, A.A.R.

The report was accepted.

LUBRICATION OF CARS AND LOCOMOTIVES

A recommendation suggesting that a general three-inch flat spot be adopted as a condemning limit for all journal box wedges was not approved. A subcommittee, appointed to formulate an A.A.R. specification or an approved list of roller bearing greases, reported that one bearing manufacturer had approved a grease produced by seven lubricant manufacturers. Recommendations were submitted by four roller bearing manufacturers for a list of eleven lubricants specifying those best suited to a specific bearing. A tabulation of the analyses of the eleven roller bearing greases was included in the report.

The committee made a recommendation to the Arbitration Committee to modify passenger car Rule 7 making provision for a lubrication period for 90 days for passenger car roller bearings.

Journal Box Lids.—The report included a list of journal box lids which have been submitted, tested, approved and awarded certificates of approval.

The report included a list of three packing retainer devices which have been approved only for those railroads which may desire to use them.

Journal Box Lubricating Materials.—The report included a record of the progress which has been made on the research program at the Indianapolis Lubrication Laboratory and contained a review of results to the date of this report as follows:

1. Relating to delivery of the oil to the journal and retention of the lubricant within the box, the waste constituent of the waste pack may vary between quite wide limits as to thread types and grades.

2. The rating of commercially available waste threads (woolen and mixed yarns, cotton threads and other materials) should, therefore, apparently be based on first cost, balanced against mechanical characteristics and resistance to continued servicing and renovating.

3. Waste-pack displacements (thread risers and rolled packing) result from the characteristics of the oil adhering to the journal. The critical range is below freezing.

4. Fluidity or non-stickiness in the subzero range are the desirable characteristics of the oil for waste-pack lubrication under winter conditions.

5. Film thickness or toughness at the range above 250 deg. F. are essential to withstand the critical conditions of summer operation.

The committee concurred in a proposal to continue an exploration of the possibilities of the unit bearing-wedge design for collarless axles to replace the present steeple-back bearing and wedge along the following lines:

(1) Progress the design of a sleeve-type bottom window lubricated bearing-wedge unit in association with a modified pedestal-type journal box for application to passenger equipment cars.

(2) Progress the design of a crown unit bearing-wedge for installation (preferably without change in the front and back openings) in the present conventional cast freight truck side frame, for application to freight equipment cars.

(3) Install one or more axle sets of both (1) and (2) for road demonstrations and limited service tests under the A.S.F. five-car Service Laboratory during the 1950 Freight Truck and Snubber Research Program Road Tests under the direction of the A.A.R. Mechanical Research Office.

(4) Amplify the investigation of the modified bearing units to include other than waste-pack lubrication and the base line lubricant as used during the exploratory test program.

Lubrication Manual.—The committee does not feel that the suggested changes in the Lubrication Manual should be made until sufficient time has elapsed to enable the provisions contained in the manual to be given a fair trial.

The report was signed by R. E. Coughlin (chairman), chief metallurgist and engineer tests, Chicago & North Western; E. H. Jenkins (vice-chairman), assistant general superintendent car equipment, Western Region, Canadian National; E. C. Ellis, superintendent car department, Chesapeake & Ohio; A. J. Pichetto, general air brake engineer, Illinois Central; D. C. Davis, lubrication supervisor, Atchison, Topeka & Santa Fe; M. A. Pinney, engineer of tests, Pennsylvania; H. T. Rockwell, assistant engineer, New York Central; M. A. Hansen, engineer of research, Gulf, Mobile & Ohio; and F. Fahland, research and standards engineer, Union Pacific.

Discussion

A third service test has been made of journal-box closures since the report was written, and this test showed the packing to be almost like new.

J. R. Jackson, mechanical engineer, Mechanical Division, described some of the test work currently being done by the A.A.R. The second progress report covering the work at the Indianapolis Laboratory will be ready in a few days. He thought it entirely possible to get a truly all-year oil in new or renovated stocks. The four recommendations of the committee on the development of a solid-type journal-box assembly have already been put into effect. A 180-deg. bearing with a collarless axle has been run on the test train, the application being to a design of high-speed truck that gives good control of lateral and vertical shocks. It is evident that a separate wedge and bearing are not needed. The unit bearing-wedge, which is essentially an extension of the flat back bearing principle with material of the conventional bearing, assumed position with the collarless axle and it took violent action to dislodge it.

The report was accepted.

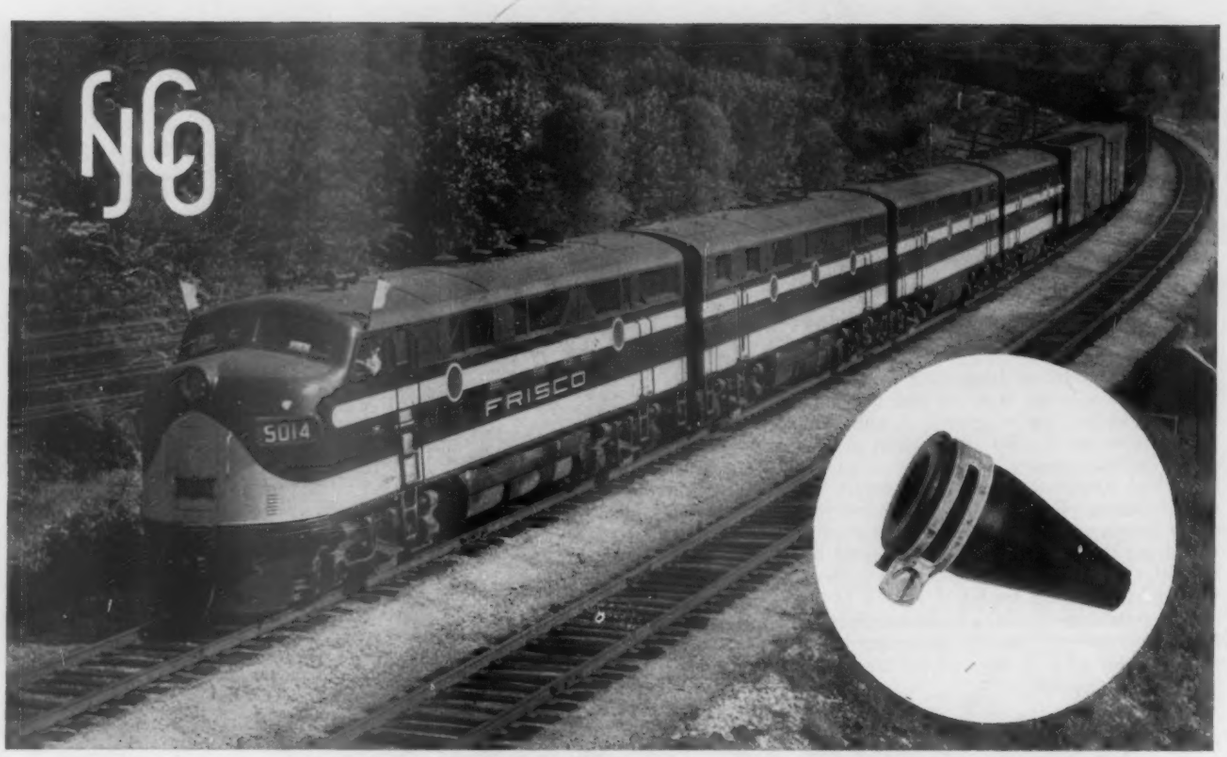
SPECIFICATIONS FOR MATERIALS

The committee recommended that revisions be made, or that new specifications be adopted, for the following numbered items and submitted to letter ballot: M-108, M-110, M-111, M-120, M-504, M-505, M-506, M-507, M-611, M-612, M-615, M-616, M-912 and M-915. M-101 was corrected to clarify the meaning of the words "as forged." Under M-115, the question of the tensile test specimen for firebox steel, and the matter of copper limitation in A.A.R. specifications, were continued on the docket. A specification for steel with both a maximum and a minimum carbon limit for brake shoe keys under M-116 was assigned for study. An editorial change was made in M-124 to clarify the intent. The grade of malleable iron for railroad castings, specification M-402, has become available from 38 suppliers, and a list has been made of these suppliers which will be sent on request. The Lubrication Committee has recommended consideration of a winter thinner for new car oil, M-906. The committee is canvassing members to obtain copies of available specifications, and will write a proposed specification and submit it for approval. The committee assigned to a subchairman the subject of writing a proposed specification for locomotive sand.

General

The study of Diesel crankcase oil by the subcommittee referred to in the 1949 report indicates that successful completion of a proposed specification for compatible Diesel

(Continued on page 78)



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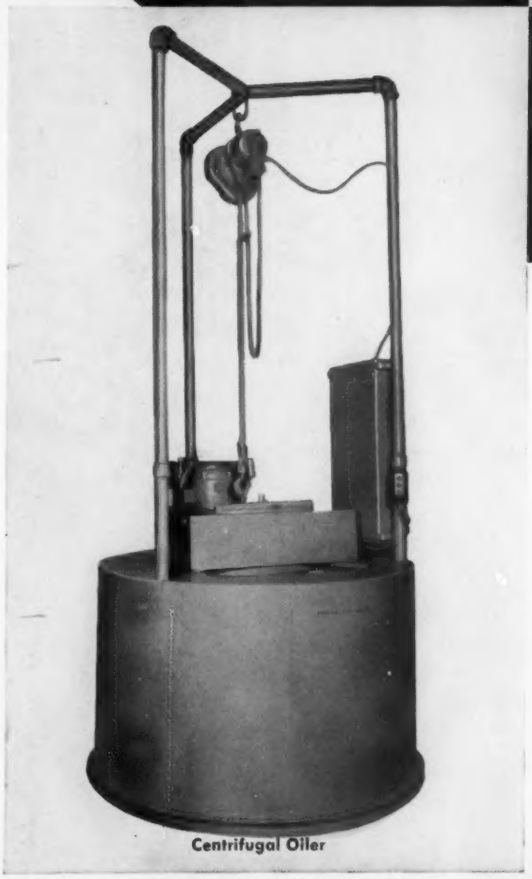

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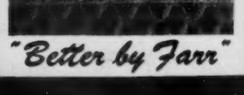

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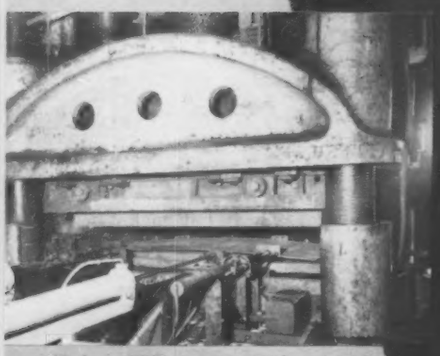
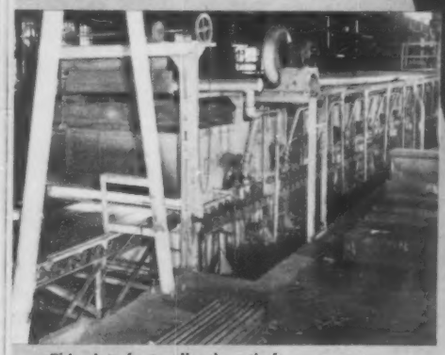


This huge 3900 ton press with automatic gauging and placing cylinders, precision forms box car ends in two sections.



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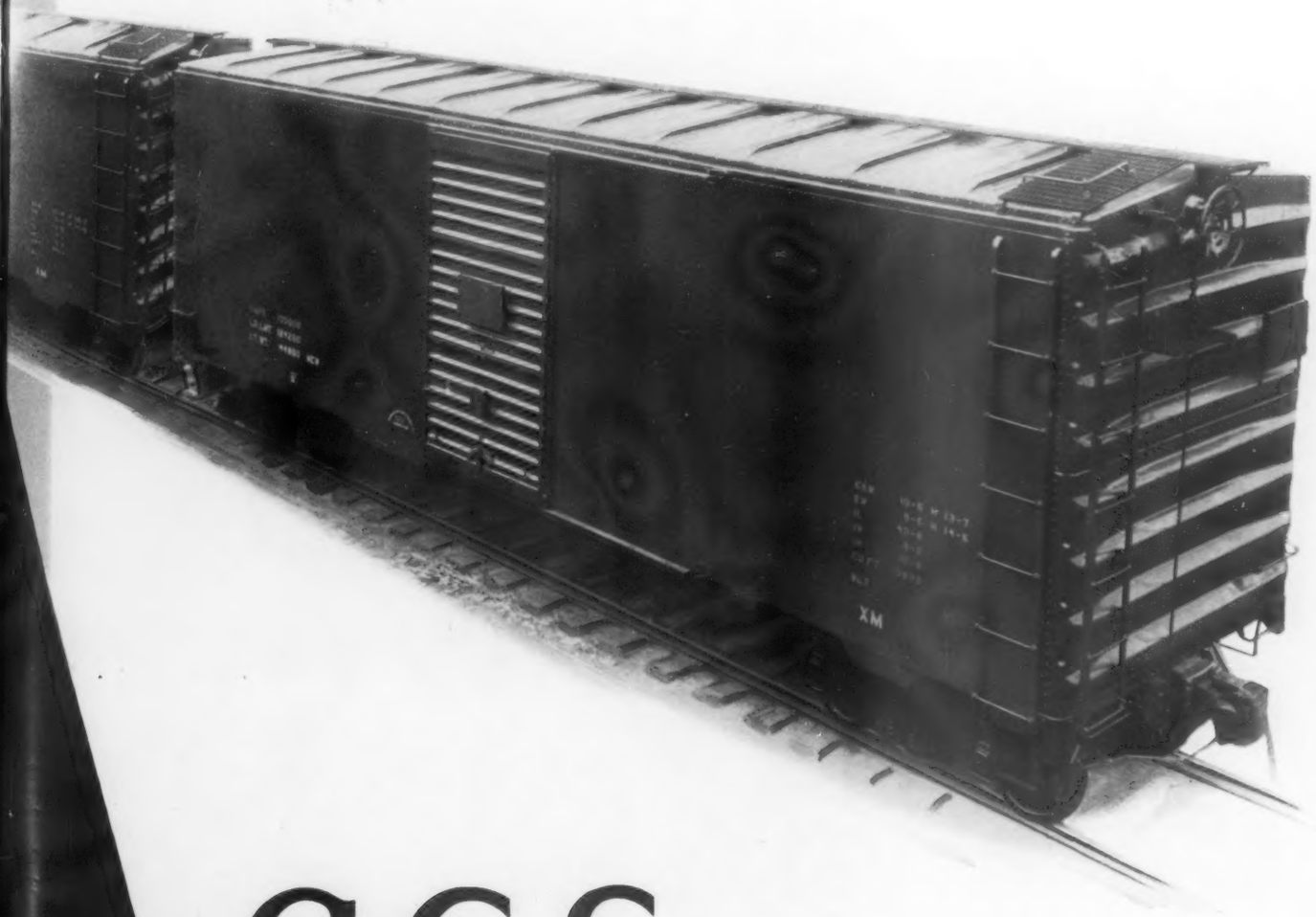

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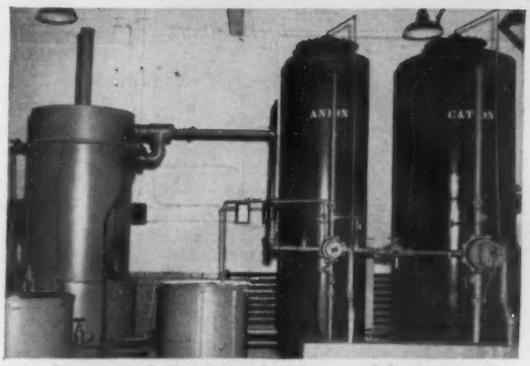

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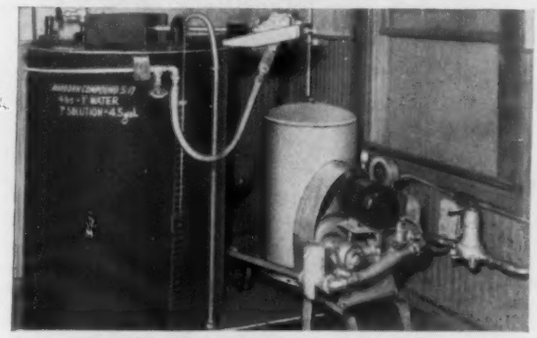

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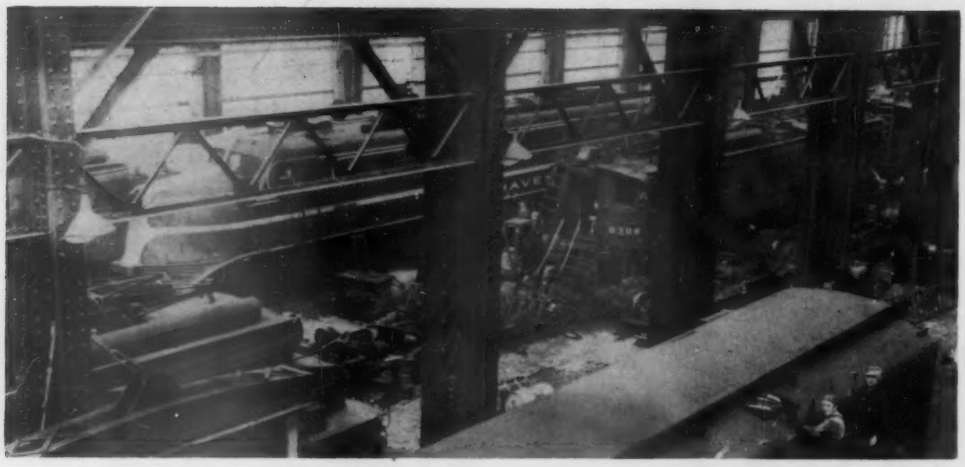

(*Continued from page 71*)

heavy duty type lubricating oil for railroad locomotives will require a research program conducted by the railroads similar to the former programs for lubricating oils meeting the requirements of Army series 2-104-B and the Navy series 9000 oil. It is the belief of the members of the specification committee that the railroad engine builders and oil refiners can be induced to take part in this test work through the Coordinating Research Council of the Society of Automotive Engineers and the American Petroleum Institute.

To engage in such research work will entail some out-of-pocket expense and a small liaison group will be appointed from the specifications committee to approach the Coordinating Research Council to determine the extent to which they would cooperate in a proposed project of this kind.

Studies of the effect of residual alloys on carbon firebox and boiler steels representing 28 fireboxes and 19 boiler steels referred to in the 1949 report were completed and attached to the report as information.

The committee consists of W. F. Collins (chairman), engineer of tests, New York Central System; P. H. Smith, (vice-chairman), engineer of tests, Chicago, Burlington & Quincy; H. G. Burnham, engineer of tests, Northern Pacific; M. A. Pinney, engineer of tests, Pennsylvania; R. W. Seniff, engineer of tests, Baltimore & Ohio; E. B. Fields, engineer of tests, Atchison, Topeka & Santa Fe; R. McBrian, engineer standards and research, Denver & Rio Grande Western; L. S. Crane, engineer of tests, Southern; and G. E. Baumgardner, assistant research engineer, Norfolk & Western.

The report was accepted and recommendations referred to letter ballot.

HOT BOX ALARM DEVICES

The principal activity of the committee was to continue observations of a device undergoing road-service tests as installed in solid-bearing equipped passenger cars on the Pennsylvania. The 1948 and 1949 reports contained previous service records.

Four hot box alarm systems or devices were approved by the committee for road service demonstration. The service tests of the Minneapolis-Honeywell device was terminated as of October 25, 1949, at which date this equipment was removed and returned to the manufacturer at his request. On the same basis, the Union Switch & Signal Co.'s hot journal detector was removed from the P.R.R. Car No. 3788 on July 25, 1949. This equipment had been undergoing service tests since December, 1945. A second installation of the Union Switch & Signal Co.'s hot journal detector, installed on P.R.R. Car No. 4265 during February, 1947, was also removed at the manufacturer's request on June 16, 1949.

The following tabulation shows the results of the road service tests of the two devices continued in service from the date of the original application to March 31, 1950.

Alarm Equipment	Service Months	True Indications	False Alarms	Possible False Alarms	Failures	Equipment Defect
Pennsylvania Cartridge	46	12	16	1	3	28
Magnus Metal Twin Plex	40	0	1	1	3	1

A summary of observations of the two devices still undergoing road service tests on the Pennsylvania covering the 12 month period between March 31, 1949, and March 31, 1950, was included in the report as Appendix A.

Road Service Experience.—The committee has again been furnished with the experience of the New York Central system during the past year with the Twin-Plex alarm now standard on all modern road locomotives, both passenger and freight and on more than 3,500 passenger cars on the New York Central system. Detailed reports covering their service record during the period March 1, 1949, to March 1, 1950, was shown in Appendix B of the report.

The 1949 annual report noted that the Southern Pacific, after experimenting with the Journ-A-Larm system manufactured by Fenwal, Inc., had plans to install this equipment on a group of new passenger-equipment cars to be built during the past year.

A report covering the Southern Pacific's experience with the Fenwal Journ-A-Larm system as of May 10, 1950, as furnished by Mr. L. H. Sultan, a member of the committee, follows:

"Southern Pacific placed two new 'Shasta Daylight' trains in service between Oakland, Cal., and Portland, Ore., on July 10, 1949. Fourteen cars in each train are equipped with Fenwal Journ-A-Larm system, which was placed in operation when new train service was inaugurated. On August 2, 1949, alarm system was turned off due to false indications caused by broken conductors in the thermo-switch to truck cables, and also in the truck-to-car body cables.

"The manufacturer supplied new cables and the system was again placed in operation in February, 1950. One false alarm, cause unknown, has been experienced on these trains since that date.

"In April, 1950, Journ-A-Larm systems on other cars operating in various trains have been placed in operation and no trouble was experienced except three false alarms, cause unknown. As of May 1st, 1950, eighty-nine cars, in-

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cluding sleepers, are operating on Southern Pacific with Journ-A-Larm system in operation.

"This system has provisions for discharging the air signal line and transmitting coded signals to the locomotive cab. This feature has not been utilized in tests thus far."

The members of the committee are J. R. Jackson (chairman), mechanical engineer, Mechanical Division, A.A.R.; M. A. Pinney, engineer of tests, Pennsylvania; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; J. Stair, Jr., electrical engineer, P.R.R.; H. T. Rockwell, assistant engineer, New York Central system; and L. H. Sultan, electrical engineer, Southern Pacific.

Discussion

It was remarked that it is better to follow through on a large number of hot-box detectors than to have but a scattered few, as the crews in the latter case do not become familiar enough with the equipment to understand its indications.

H. W. Faus, engineer of locomotive equipment, New York Central, agrees with those who say that it is more important to eliminate hot boxes than it is to detect them after they occur, yet feels that it is nonetheless true that we are still having overheated bearings and that it is worth while to find a means of detecting them when they do occur. It may not be the ideal approach to the problem, but it is like bumper blocks. They are worth having even though air brakes are the desired method for stopping the train. He thought that no alarm would give satisfactory results if applied to only a few cars. It would be like using only a few blue flags at one or two points on a large system; not enough people would be familiar with it. On one road only one car out of every 6,000 was equipped with each device. In three failures, the bearing was hot and an indication given, but no report was made as the crew did not understand the indication. In five failures investigated in which the hot box was detected by other means, the alarm had functioned in four, but was not reported.

The report was accepted.

TANK CARS

During the past year the committee was called upon to give consideration to a total of 390 dockets and applications for approval of designs, 143 of which covered materials and construction of 3,168 new shipping containers, for mounting on new cars or for replacement on existing cars.

Two applications covered the construction of five multiple-unit cars to be used for the transportation of 15 Class I.C.C.-106A500 type one-ton containers each.

One application covered the construction of one Class LTA car to be used for the transportation of pulverized or granulated dry commodities.

Five applications covered the construction of nine new car structures on which would be mounted an equal number of existing tank car tanks.

One application covered the construction of an undisclosed number of 19,000-gal. capacity class I.C.C.-103-W tank cars for the transportation of oil.

Two hundred and fifteen applications covered alterations in, additions to, or conversions and reconditioning of 3,127 existing tank cars or shipping containers.

Q-187 Saran Rubber Lining.—Upon recommendation of the committee, concurred in by the Bureau of Explosives, the Interstate Commerce Commission, on September 12, 1949, issued Special Permit No. 504 authorizing the equipping of two Class I.C.C.-103-B tank car tanks and their appurtenances with Q-187 Saran rubber lining for service trials in the transportation of hydrochloric acid. This authorization requires owners or operators of the two cars on which these tanks will be mounted to make annual inspections of these linings and render reports as to their condition, with statement showing the number of loads transported and loaded and empty miles run by each car during the period being reported on.

The two cars with Q-187 Saran-lined tanks were placed in service: one on January 3, 1950, and the other on April 6.

Modification of I. C. C. Regulations.—Upon recommendation of the committee, concurred in by the Bureau of Explosives, the Interstate Commerce Commission, by order dated January 23, 1950, amended the Regulations for Transportation of Explosives and Other Dangerous Articles at Section 73.31 Paragraph (g) Note 2 and at Section 73.303 Paragraph (q) (1) Note 15, limiting the use until May 1, 1950, of A.R.A.-IV and I.C.C. 104 tank cars, converted as prescribed and authorized by order of February 26, 1942, for the transportation of liquefied petroleum gas having vapor pressures not exceeding 65 lb. per sq. in. at 105 deg. F.

The report was signed by L. H. Schuster (chairman), engineer car construction, Southern Pacific; J. R. Hayden superintendent car department, Missouri-Kansas-Texas; H. S. Marsh, superintendent car department, Missouri Pacific; A. A. Ott, chief car inspector, Pennsylvania; R. S. Venning, special engineer, Chesapeake & Ohio; F. J. Harris, mechanical engineer (Car), Canadian National; J. J. Root, Jr., vice-president, Union Tank Car Company; R. T. Baldwin, secretary, the Chlorine Institute, Inc.; R. W. Thomas, manager, research and development, Phillips Petroleum Company; J. M. Dahlem, master car builder, Mid-Continent Petroleum Corporation; and T. H. Caldwell, maintenance superintendent, Dow Chemical Company.

The report was accepted without discussion.

LOCOMOTIVE CONSTRUCTION

This year's report was presented in four sections: general, steam and electric locomotives, Diesel locomotives, and gas turbines.

The general section included recommendations for revision in the recommended practice for seamless steel couplings for screw-threaded pipe; standardization of roller bearing truck pedestal widths on locomotives and tenders; a progress report on the investigation with respect to the intensity of lateral forces on curved track and three items of steam locomotive boiler design—copper flue ferrules and the record of welded steam locomotive boilers. The report, in connection with the latter item, noted that no additional welded boilers had been added in the year covered by the report. This section also includes a report on returns from a questionnaire on the seal welding of stay-bolts to firebox sheets and expressed the subcommittee's opinion that the practice has been sufficiently extended to warrant the formulation of definite recommendations.

Improved Progress for Steam Locomotives

A subcommittee selected to consider improvement and modernization programs for existing steam locomotives recognized that the economics involved in extensive modernization are such that the subcommittee considered it unwise to devote any great amount of time to the subject now. Included in the report, however, are references to several proposed items for economies in steam locomotive operation.

A recommendation was made that the work of the steam and electric locomotive section be expanded to include new subjects especially selected to fit the changing status of the steam locomotive. From a list of such subjects submitted, the following will be assigned to subcommittees for investigation and ultimate report: (1) Progress report on British and European steam locomotive development and practice; (2) Progress report on new developments with respect to steam locomotives, such a steam-turbine and turbo-electric; (3) Steam locomotive storage practice; (4) Oil-burning steam locomotives; (5) Spring and spring rigging design; (6) Coal combustion; (7) Smoke lifters; (8) Application of roller bearings to main and side rods (9) Revision of

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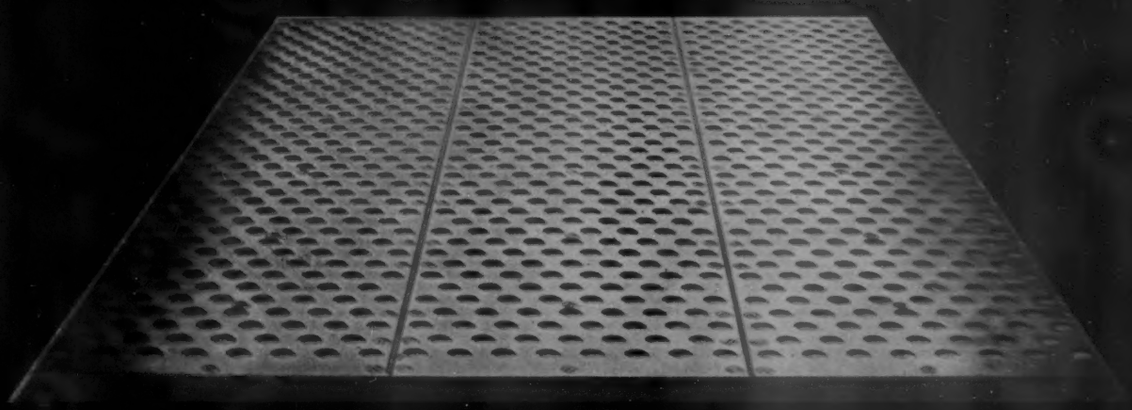

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recommended practice on multiple bearing crossheads; (10) Revision of recommended practice with respect to front end arrangement and (11) Steam boiler design and construction.

Diesel-Electric Locomotive Design

At the request of the Locomotive Maintenance Officers' Association, a subcommittee has initiated a study of standardization of Diesel-electric locomotive parts. In commenting on the work the subcommittee made the statement that "many parts not involved in the basic design of the locomotive might easily have been standardized had builders been so minded. In some instances, an existing A.A.R. standard might well have been used either 'as is' or modified . . . . so that the railroads could be spared the confusion which now exists.

"It is undoubtedly true that the railroads themselves are equally responsible in that they . . . . permitted unnecessary departure from recognized standards."

Standardization was considered in the report in the matter of trucks for 600- and 1,000-hp. switchers; couplers for Diesel-electric locomotives; cab arrangement; and location of air and steam heat connections on road Diesel locomotives.

Fire Prevention on Diesel Locomotives

The committee continued contact with the Fire Protection and Insurance Section, and selected from a list submitted by the F.P.&I. representatives the following subjects for consideration by the Mechanical Division:

(1) Oil leaks, particularly from timing gear assembly.

This is a difficult problem on Diesel engines furnished by one of the principal builders, said the report, which added that the gaskets now in use contribute considerably to the problem since they deteriorate in stock due to shrinkage and brittleness which develops after a short period in storage. Even with more suitable gasket material a change in design of the seal is indicated to correct this matter satisfactorily.

(2) Leaky or faulty stacks which permit fumes and sparks to enter engine compartment.

This concerns an older type of Diesel engine furnished by one of the builders. One railroad has made correction by using a stainless steel ball joint between the exhaust manifold and the stack, while another railroad applied suitable baffles in the exhaust stack.

(3) Gear cases—poor design and fit resulting in loss of grease resulting in the accumulation of sludge and debris on the traction motors.

The matter of poor design referred to a new type of gear case furnished by one builder which pumped the grease out of the case. Its shortcomings were recognized and the faulty gear cases were replaced. Poor fit of gear cases, however, is a matter of maintenance and must be policed to prevent the loss of grease, which contributes to fire hazards underneath the locomotive.

(4) Accumulation of oil in sump underneath main generator.

The question raised concerned means for draining off the accumulation, and to facilitate cleaning. Two major railroads have devised means for draining the sumps but call attention to the need for care in running the drain pipes to avoid discharging the waste oil on top of fuel tanks, trucks, or on the steam pipes.

(5) Enclosure of decks underneath cabs to preclude accumulation of trash.

This refers to the space housing air reservoirs, brake valves, etc., as well as providing air intake for engine room ventilation. It is suggested that expanded metal screens be applied, and to facilitate cleaning that the space be properly lighted.

(6) Fuel tanks—can design be changed so as to suspend them directly beneath frame, thereby eliminating possibility of oil and trash accumulating thereon? Design must be such that there will be no oil draining from the deck to the top of tanks.

Suggestion was made that if all piping extending through deck of locomotive were fitted with flanged collars the seepage of oil to tops of tanks, trucks and steam lines would be minimized.

(7) Lubricating oil tanks and other appurtenances—can they be located to prevent pockets difficult to clean?

Change in design by manufacturer is needed to completely eliminate this problem, said the report. Some roads have corrected the situation by filling such voids and hidden or inaccessible pockets with car or floor cement, or a similar material.

(8) Elimination of false decks.

This referred to an earlier model furnished by one of the builders, which has been corrected on later designs.

(9) Steam cleaning of traction motors to remove grease and oil accumulation.

If properly carried out and steam is properly applied, with engine operating in fifth or sixth throttle position and all blowers on, no trouble should be experienced from moisture grounds in the traction motor.

(10) Location of air compressor to steam generator, resulting in compressor running hot, and space between compressor and generator difficult to clean.

This condition exists on one type of passenger locomotive only. The compressor has been relocated on later models. It has been the experience of some of the roads that hot compressors on this particular model have been the result of improper and faulty springs in relief valves, which has caused excessive operation and extreme pressures.

(11) Elimination of sharp corners where oil and sludge accumulate, the contour of which makes cleaning almost impossible.

This is something only the manufacturers can correct, and suggestion was made that this be incorporated in specifications for new units.

(12) Protection of cables under locomotives, particularly from chafing where they emerge from conduits and from oil leakage.

Some roads have corrected this deficiency by covering cables with neoprene jackets, which will take care of the first phase; the elimination of oil leaks as mentioned in other subjects should correct the last portion. However, it is believed that manufacturers should incorporate such protective coverings, and apply flanged collars where pipes

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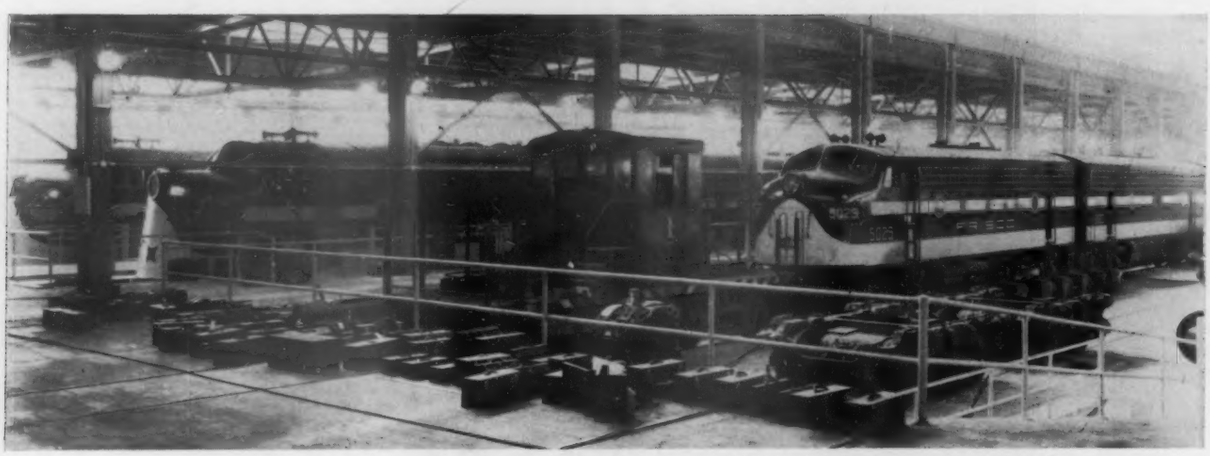

lead through deck, in the locomotives when constructed.

Minimum requirements for fire protection on Diesel-electric locomotives were developed by a questionnaire and, after considering all conditions, the committee made definite recommendations as follows:

Passenger and freight locomotives: A unit cabs—one 20-lb. carbon dioxide or one 20- or 30-lb. dry chemical.

Passenger and freight locomotives: A and B units, in engine compartments—two 20-lb. carbon dioxide or two 20- or 30-lb. dry chemical.

Switchers, road: Two 20-lb. carbon dioxide or two 20- or 30-lb. dry chemical. (At least one extinguisher should be placed in the cab, and it would be preferred that both be located there.)

Switchers, yard: One 20-lb. carbon dioxide, or one 20-lb. or 30-lb. dry chemical.

Recommendations were made as to the character of fire protection equipment as follows:

(1) A bank of one or more 50-lb. carbon dioxide cylinders with hose or hoses sufficient to reach all parts of units on which installed. Hose or hoses should be located at doors so as to be accessible from outside; hose lengths can be shortened by piping carbon dioxide to outlets near doors. A horn shorter than the conventional horn can be used in the Diesel. To operate the carbon dioxide system, hand pulls should be provided inside and outside the units. Carbon dioxide from such a system, or separate carbon dioxide cylinders can be piped direct into electrical cabinets and generators, if desired. Valves, of course, are necessary. It is also possible to interconnect systems on the individual units of multi-unit locomotives.

(2) A mechanical foam system consisting of 50 gal. or more of pre-mixed foam with 1½ in. hose sufficient to reach all parts of unit (a desirable minimum is 100 ft.) and a foam playpipe, foam to be expelled by a 20-lb. carbon dioxide or nitrogen cylinder. An auxiliary connection to main air reservoir, with check valve and shut-off valve, is recommended. This extinguishing medium must not be used inside a unit unless the portable equipment has been exhausted, or the engine or engines have been shut down.

(3) A bank of one or more 140 lb. dry chemical cylinders with sufficient hose to reach all points on the unit. There is some question as to availability of space in the engine room for this equipment.

(4) Fire Detector or Alarm System for inside units: A few roads have installed systems for detecting fires in the engine rooms of units. These systems have merit in detecting a fire within the unit in its early stage which otherwise would gain appreciable headway, especially at night before discovery. These systems consist of fixed temperature thermostats above the engines, steam generators, compressor, etc., and also in the electrical cabinets, connected in series to an audible and a visual indicator such as a bell and a red light in the cab of the A unit. Temperature settings of thermostats vary with respect to location. The installation should be so arranged that it will not interfere with maintenance, or require to be disassembled if engines or generators are removed.

(5) Smoke Detector or Alarm System: Insofar as the committee is aware, two roads have installed this type of equipment for detecting under-carriage fires. These roads did not answer the questionnaire, and data on the practicability of this type of system are not available. The committee understands that such systems are somewhat susceptible to false alarms by reasons of roadside fires such as burning vegetation, crossties, etc. At this time the committee questions the feasibility or merits of such systems.

(6) Water Fog: This type of extinguishing equipment has its limitations on Diesel locomotives. The committee has no record of any system of this type having been installed. Its views on this type of equipment for Diesel-electric locomotives are that it has limitations which will have to be overcome before serious consideration can be given.

These limitations consist of volume of water reserved for fire purposes only, and the method and cost of keeping it from freezing, if necessary. Water pressure required would be from an electric pump which could not be operated in event of power failure.

The report outlined the type of information that is being collected by the F. P. & I. Section with the idea of developing information on instructions pertaining to the use of fire fighting equipment; crank case cleaning; precautions with welding equipment; separation of battery leads and the use of a peep-sight for checking fuel oil drippings in the heating boiler.

A table was included in the report summarizing the type of fire fighting equipment used on 58 roads.

A subcommittee appointed to investigate means for dealing with overheating of motor suspension bearings and armature shaft bearings reported that no device now exists which justifies a definite recommendation as to adequacy in carrying out the recommendations of the Interstate Commerce Commission. The committee is following developments with respect to new types of thermal alarms and wheel slip indicators.

Gas Turbine Locomotives

The concluding section of the report contained a progress report on gas turbine locomotive developments.

Since last year's report the Locomotive Development Committee of Bituminous Coal Research, Inc., has made considerable progress on the coal-fired gas turbine project.

A full-scale pilot plant, utilizing a Houdry gas turbine unit, has been in operation since November, 1949, at the Dunkirk, N. Y., works of the American Locomotive Company. This Houdry unit was loaned to the Locomotive De-

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velopment Committee by the United States Bureau of Mines. This power plant has been fired with pulverized coal for 250 hours at an average combustion rate of 1,500 lb. of coal per hour. During this test period, a total of 375,000 lb. of coal was burned.

The Allis-Chalmers Company is currently completing the power plant intended for the first locomotive. This power plant, when completed, will be taken to Dunkirk and assembled with the other components which will go into the locomotive, and there given extensive load and cycling tests. It is expected that these tests will be completed by mid-December, 1950.

The tentative design indicates that it will be of two-unit construction, approximately 151 ft. 7 in. overall in length. Each unit will be carried on two 3-axle swivel trucks, will weigh approximately 384,000 lb. each, in loaded condition; and should develop 4,200 hp. at the generator at full load conditions.

Present plans call for the construction of one locomotive immediately upon the successful completion of the Dunkirk locomotive power plant tests. If the schedule is maintained as outlined, the Locomotive Development Committee should be able to demonstrate the coal-fired gas turbine locomotive in road tests during the year 1951.

General Electric Gas Turbine Locomotive.—The Alco-G.E. 4,500-hp. gas turbine locomotive was reported on by the subcommittee as follows:

Generally speaking, the performance of this locomotive has been satisfactory, particularly with respect to the basic design. No trouble has been experienced with the main turbine or axial flow compressor. Practically all trouble and delay have been attributable to breakage of fuel hoses, gages and gage lines, carbon on nozzles, testing of different designs of various accessories, and to the adjustment of smaller parts which could not be anticipated until the unit was operated in road service.

The cost of operation is comparable with a 4,500-hp. three-unit Diesel-electric locomotive, except for fuel. During the periods that the gas turbine operated on Diesel fuel oil, the comparison was quite unfavorable. When operating on Bunker C oil, the comparison was better, due to the difference in the price of the two fuels. Because difficulties were experienced with combustion tube caps and liners, largely attributable to mechanical difficulties with the fuel system, it was necessary during the later part of the test period to increase turbine idling speed. This condition will be corrected by installing improved caps and liners.

Operation in tunnels has been satisfactory. Tests conducted in a tunnel 1⅛ miles long showed some rise in inlet temperatures to turbine compressor, but not sufficient to affect the horsepower output of the turbine. After standing still near the center of the tunnel, the recirculation of gases did not make it uncomfortable in the cab or engine room, and was considered less objectionable than in cabs of steam locomotives.

By the latter part of November, 1949, the gas turbine in the locomotive had operated approximately 2,300 hours, the majority on Bunker C fuel, and had accumulated a total of 27,863 miles, 17,928 of which were operated on the Union Pacific. At this stage, the locomotive was withdrawn from service, as General Electric desired completely to inspect the gas turbine power plant. During this inspection, a number of comparatively minor but essential modifications are being made. Inspection and modifications were scheduled for completion during the first quarter of 1950, and the locomotive will be returned to freight service on the Union Pacific.

Westinghouse Gas-Turbine Locomotive.—Installation is now nearing completion on a Westinghouse 4,000-hp. gas turbine locomotive for passenger service.

Santa Fe-Baldwin Locomotive.—The basic design of the Santa Fe oil-fired gas turbine locomotive is the same as reported last year. The locomotive is being built by Baldwin and is rated at 3,750 shaft hp. This locomotive is a gas turbine being built by the Elliott Company and has been under tests. It is expected to be completed before the end of 1952.

Lima-Hamilton Gas Turbine.—The concluding portion of the report is a progress report on the Lima-Hamilton free piston gas turbine locomotive which is being built by Westinghouse Electric Corporation. Delivery of the power unit is expected in 1950.

The members of the committee are H. H. Lanning (chairman), mechanical engineer, Atchison, Topeka & Santa Fe—Steam and Electric Locomotive Section: C. H. Knowlton (vice-chairman), assistant engineer equipment, New York Central system; H. C. Wright, general superintendent motive power, Western Region, Pennsylvania; Frank Williams, chief mechanical engineer, Canadian National; D. R. Calleri, mechanical engineer, Southern Pacific; J. L. Ryan, mechanical engineer, St. Louis-San Francisco—Diesel Locomotive Section: A. G. Hoppe (vice-chairman), engineer research and development, Chicago, Milwaukee, St. Paul & Pacific; K. Cartwright, chief mechanical engineer, New York, New Haven & Hartford; G. F. Wiles, supervisor Diesel-electric locomotive operation, Baltimore & Ohio; H. V. Gill, superintendent shops, A.T. & S.F.; F. Thomas, assistant to general superintendent equipment, Diesel and electric, N.Y.C. system—Gas Turbine Locomotive Section: H. C. Wyatt (vice-chairman), assistant general superintendent motive power, Norfolk & Western; J. B. Blackburn, engineer motive power, Chesapeake & Ohio; J. L. Carver, mechanical and research engineer, Illinois Central; H. Rees, mechanical engineer, Union Pacific; and F. H. Einwaechter, chief engineer motive power and equipment, B. & O.

Discussion

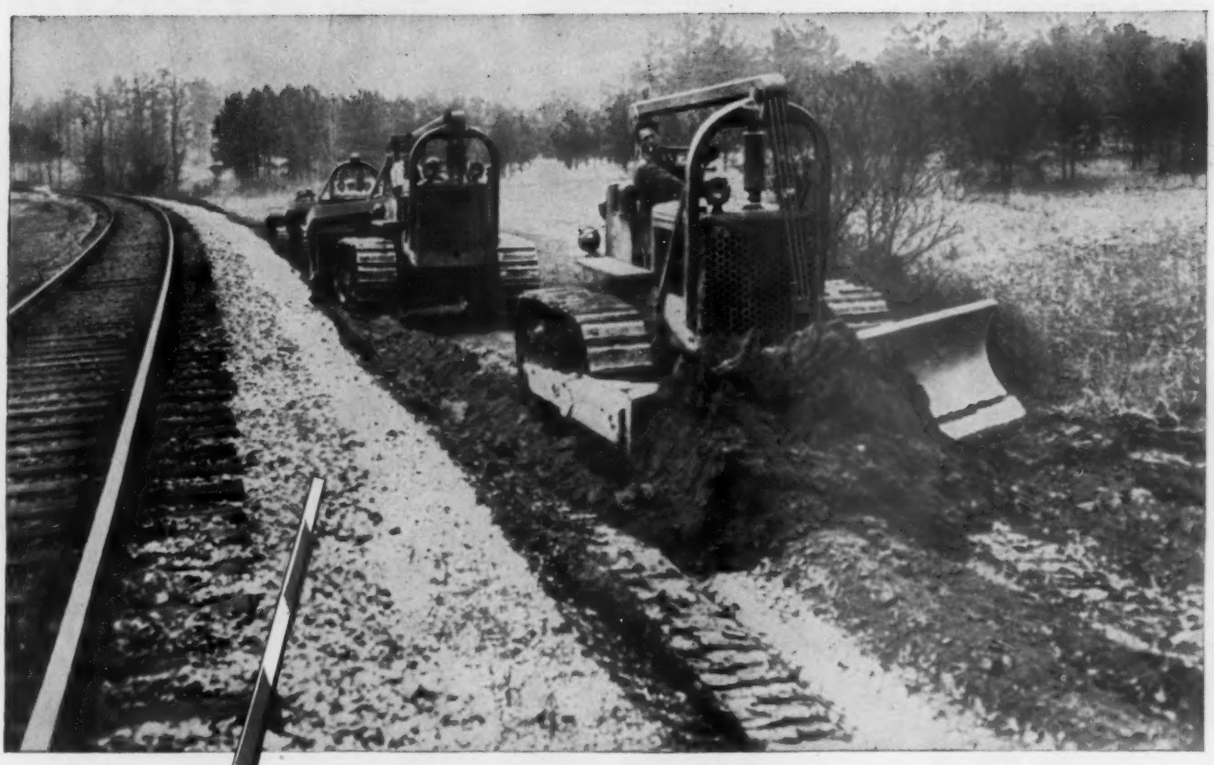
H. H. Haupt, general superintendent of motive power, Central Region, Pennsylvania, said that the recommendations for engine and trailer truck lateral resistance pertained to the 4-8-4, and asked if these recommendations apply also to the 2-10-4 with the drive on the third axle rather than on the second axle. The reply was that the 2-10-4 was tested as a matter of interest because it was available. Recommendations, if made for the 2-10-4, would be somewhat similar to those for the 4-8-4 considering the No. 3 axle on the 4-8-4 equivalent to the No. 4 axle on the 2-10-4. However, no definite comparison can be made.

W. I. Johnson, assistant mechanical engineer, Louisville & Nashville, was impressed with the committee's conclusion that, irrespective of any existing or contemplated degree of Diesel operation, many individual items of steam locomotive improvement will effect definite savings where a general improvement program may not be justified. As his management continues to Dieselize it is no longer inclined to improve steam and will authorize only minor improvements costing $400 to $500 per locomotive at one time. Even this small amount, however, will pay off. Mr. Johnson believed in keeping modern steam power well maintained and up-to-date, and improving semi-modern locomotives.

One member mentioned that it would be worth while to work out a program for steam locomotive storage practice. The air craft industry had considerable trouble and expense storing planes until it worked out a program of recommended practices. Another member had trouble with cast steel crossheads cracking on 2-8-4's, the oldest of which was six years, and asked if any one had information on wrought steel crossheads to improve this situation. A member replied that his line had no difficulty from cracking using forged crossheads with detachable shoes.

A. G. Hoppe, engineer of research and development, Chicago, Milwaukee, St. Paul & Pacific, recalled that several years ago he advocated quitting the seal welding of staybolts and using an all welded bolt instead. The Milwaukee now has one locomotive equipped with 80 such bolts on one portion of one side sheet.

G. W. Bohannon, chief mechanical officer, Chicago & North Western, said that the C. & N. W. now has two Diesel-locomotive wheel-slip controllers in service, and that another is being considered which is on a different principle but is not yet fully developed. The matter of standardization of parts is exemplified by the difficulties that arose on pedestal openings. It was advocated that everything possible be done when new equipment is being developed to get the builder to conform to standards when in the pilot model stage be-



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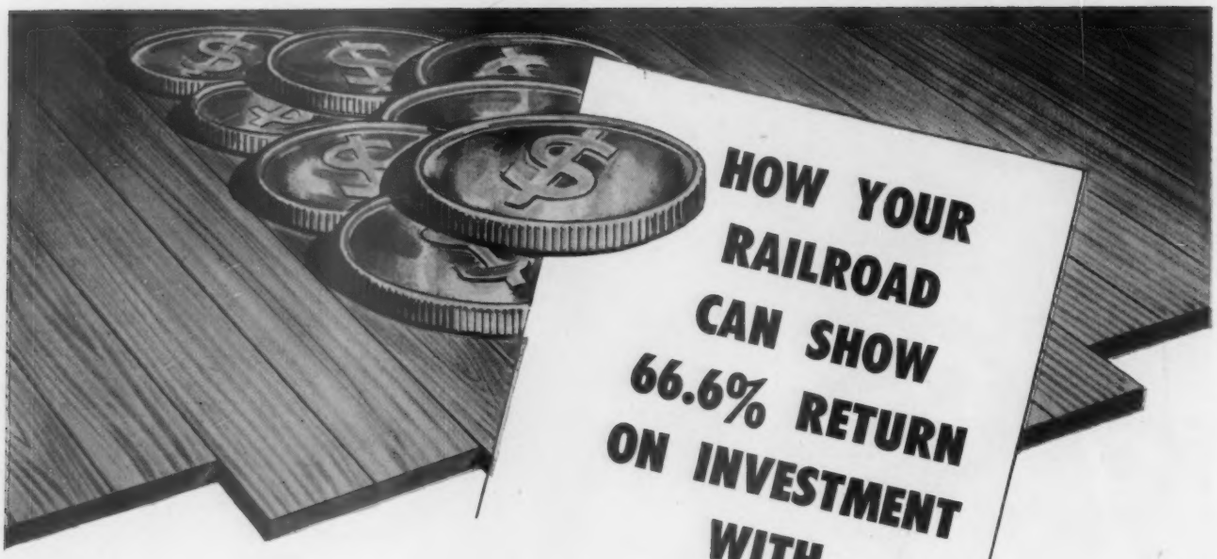

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fore so much money has been spent that changes cannot be afforded.

H. V. Gill, superintendent shops, Atchison, Topeka & Santa Fe, said that 150 traction motors are being tested with different makes of roller bearings and that the railroads are still using overgrown street car motors. No improvement has been made in traction-motor gear cases, and either the builder should be required to redesign the cases or the railroads should build them themselves.

C. M. House, general superintendent motive power and car equipment, Gulf, Mobile & Ohio, emphasized the need for greater standardization of Diesel locomotive parts, uniform cab arrangements, fire prevention and good housekeeping. He outlined the G. M. & O. procedure for keeping Diesels clean and mentioned that certain cleaning operations are placed on the periodic maintenance forms.

T. T. Blickle, mechanical assistant, Atchison, Topeka & Santa Fe, said that the important problem on traction-motor armature bearings is to improve the present design, and that it is more beneficial to direct efforts toward this than it is to finding a device that will determine the failures, which device will, itself, require maintenance.

The gas-turbine section of the report, which covered developments up to April, was brought up to date. The Houdry unit has now accumulated 455 hr. of firing with coal, 205 of these hours during the last 18 working days. Two continuous runs have been made, one of 32 and one of 45 hr., and in neither instance was the shutdown forced. High combustion efficiency has been obtained and the turbine blades have held up. Two turbines are on order, one from Elliott, which is similar to the Santa Fe unit, and the other from Allis Chalmers. The power plant will be abe to use either coal or heavy oil. The completion date for the Santa Fe locomotive mentioned in the report as the end of 1952 was intended to read 1950, but the 1950 date has been extended.

J. M. Nicholson, director, Department of Research, Atchison, Topeka & Santa Fe, said that the three largest items of locomotive expense are fuel, carrying charges and maintenance, in that order. For the gas turbine to expand its use it must have an overall cost and reliability that compares favorably with present types of power units. Experimentation to use low-grade fuel oil has been developed to where it can be expected to reduce the fuel cost. Metals have been developed to where a working temperature of 1,350 degrees can be safely used, and experimentation is underway to develop materials that will permit still higher working temperatures which will further improve the efficiency of the gas turbine. Exhaust temperatures are high and development work is under way to utilize this waste heat for steam generation as well as for power generation by using a low-pressure turbine which offers possibilities of improved overall efficiency.

The report was accepted and recommendations referred to letter ballot.

WHEELS

Corrections were made to Fig. 8, page 3, Supplement 1 to the Wheel & Axle Manual eliminating the note referring to turning off 5/16-in. of the black collar. The report included a table of standard axle dimensions making dimensions *C* and *D* the same for standard and tubular axles thus preventing the use of the wrong gage.

Revisions were made to Manual page G-2B-1950, Specifications M-403-48 and a recommendation was made that the former condemning limits for cast iron wheels of 80,000 lb. capacity and over be re-established to provide that wheels under cars shall be removed with flange having flat vertical surface extending 7/8 in. or more from tread, or having flange 1-1/16 in. thick or less, gaged at a point 3/8 in. above tread, instead of the present condemning limits for these defects, which are now set at 1 in., in both instances. It will be necessary that the flange limit remount gage for remounting all cast iron and cast steel wheels as shown on Manual page B-45, also cuts shown as left-hand portions of Fig. 106 of

Wheel & Axle Manual and Fig. 7, page 167, of the current Interchange Rules, be changed to provide 1-3/16 in. openings, instead of 1 1/8 in. openings now shown. Also, it will be necessary to change the present 1 in. opening in the regular wheel gage, page 75, Fig. 7, of Wheel & Axle Manual, and page 155, Fig. 1, of current Interchange Rules, to provide 1-1/16 in. opening.

Changes were recommended in Specification M-107-48 to conform to changed service conditions and changes in the Class A wheel specification.

The investigation of the relation of wheel failures to hot stamp markings on Diesel locomotive wheels is to be continued.

The special committee on prevention of steel wheel failures under Diesel locomotives and passenger cars reported that a questionnaire will be sent to 33 roads and a report on the results presented next year.

Nicked Axles.—The nicking of axles, on journals and between wheel seats has reached such proportions that the committee urged that action be taken. As most of the damage is being done in loading and transporting mounted wheels, due to the type of wheel car being used and to lack of proper maintenance of such cars, it was decided to request the Car Construction Committee to develop designs of cars for transportation of mounted wheels used in various classes of service, including wheels having Budd disc brakes, roller bearing wheels, Diesel locomotive wheels, locomotive tender, engine truck and trailer wheels, with the understanding that such designs be submitted to the Wheel Committee for approval before being approved as Standard or Recommended Practice.

It also was decided to request the Committee on Loading Rules to review carefully, improve and bring up-to-date the present figures in the Loading Rules for the shipment of mounted wheels of all types.

These subjects have been placed on the dockets of the committees involved, for consideration.

It was agreed that the best results would be obtained by the use of cars having buckets or receptacles or what are sometimes called well-type cars, which would hold mounted wheels securely in position and not permit wheel flanges to contact any part of axle of adjacent pairs of wheels.

The report recommended that this matter be progressed as rapidly as possible, and after a fixed future date a check

(Continued on page 92)

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(Continued from page 89)

should be made by A.A.R. mechanical inspectors to aid in securing uniform handling of wheels in transit.

Hub Wall Thickness.—The committee has considered a suggestion that the minimum hub wall thickness of wrought steel wheels be decreased from the present specified 1⅛ in. to 1 in. in order to economize in the use of such wheels. The committee recommended, as a letter ballot item, that 1 in. minimum hub wall thickness be specified for wheels used on Classes A, B, C, and D axles and that 1⅛ in. minimum hub wall thickness be specified for wheels used on Classes E and F axles. If this recommendation is approved by letter ballot, the committee will arrange to make the necessary changes on the design sheets shown in Section G of the Manual of Standard and Recommended Practice.

Hub Design of Wrought Steel Wheels.—The committee recommended, as a letter ballot item, that wrought steel wheel design C-33 (Manual page G-35) be changed to show dimensions 0_1 and 0_2 as $9\frac{3}{4} + 1 - 0$ in. and maximum finished bore as 7¾ in., in order to be consistent with wheel seat diameter specified for passenger car axle on which these wheels are used in some head end service.

As information, an error has been noted in dimensions for hub wall diameter of design A-36 wrought steel wheel shown on Manual page G-47. The hub diameter dimensions 0_1—0_2 are specified as $9\frac{1}{2} + 1 - 0$ in. and maximum finished bore as 7¼ in. In order that these dimensions may be consistent with wheel seat diameter for 5½ by 10 in. passenger car axles, the committee held it in order to editorially correct dimensions 0_1—0_2 to show $9\frac{3}{4} - 1 - 0$ in. and maximum finished bore as 7¾ in. and it is suggested the secretary arrange to make these editorial corrections with the next set of revised and additional Manual pages.

The report also contained extensive detailed recommendations for editorial corrections to be made in Section B of the Manual with respect to master gages; gages for new one-wear and new cast iron wheels and alternate cylindrical tread wheel gages.

Editorial corrections were noted in the Wheel & Axle Manual with reference to built-up treads on wrought steel wheels; failure of axles due to use of gas torches; and wheels that have been damaged in fire.

The appendix of the report outlined revisions to be made on pages 201 to 206 of the Manual, Section XX.

The report concluded with the notation of the addition of Section XXI to the revised edition of the Wheel & Axle Manual.

The members of the committee are E. E. Chapman (chairman), mechanical assistant, Atchison, Topeka & Santa Fe; H. H. Haupt (vice-chairman), general superintendent motive power, Central Region, Pennsylvania; I. N. Moseley, research and test engineer, Norfolk & Western; A. M. Johnsen, engineer of tests, Pullman Company; M. S. Riegel, assistant engineer test, New York Central system; R. W. Seniff, engineer of tests, Baltimore & Ohio; P. V. Garin, engineer of tests, Southern Pacific; B. C. Gunnell, chief mechanical engineer, Southern; H. E. Wagner, superintendent car department, Alton & Southern; G. A. Harstad, foundry metallurgist, Chicago, Milwaukee, St. Paul & Pacific.

Discussion

Three changes were made in the report. The manufacture of wheels for Diesel locomotives without marking was sanctioned, but not for interchange, and this was accepted by a vote of the members present. The new Paragraph 50 for addition to page 52 in the revised edition of the Wheel and Axle Manual was referred for further study because there is some objection to accepting any wheels which had been in a fire. A typographical error was corrected in the report by changing Fig. 7 to Fig. 73 as on page 75 of the Manual.

C. B. Bryant, chief engineer, Technical Board of the Wrought Steel Wheel Industry, said that the action on wheel marking indicates concern over wheels in Diesel locomotive service. As neither the A.A.R. nor the I.C.C. kept records of this type he compiled some statistics. The first instances of failures were reported in 1946. The present marking has been in effect for years and on millions of wheels. As far as is known, no failure from marking has ever occurred under steam locomotives, passenger or freight cars; all have been on Diesels. Thirty-six Diesel wheels have been found cracked, 15 on inspection and 21 in service. This is out of over 80,000 wheels during a four-year period. All were in freight, helper or switcher service, none in passenger. Two roads in heavy grade territory accounted for 23 of the failures. All showed signs of having been overheated, some perhaps by the hand brake. One road had 12 failures in 1946 and 1947, but none in 1948 or 1949. It is not known how the trouble was stopped. Failures do not occur under passenger cars with tougher braking requirements, nor under tenders with heavier wheel loads. From this it might be suspected that the failures are due to the high tractive force of the Diesel. Mr. Bryant felt that the wheels should be marked in some place, perhaps on the hub face as a greater hazard could arise from getting a wrong class of wheel on a locomotive than the marking would incur. Adopting gages for one-wear wrought-ster wheels should increase the life. In the past it was necessa to take off flange metal, and flange wear frequently caus removal.

C. M. Stoner, executive vice-president, Association of Manufacturers of Chilled Car Wheels, commented on the new chilled wheel design. With the hub section cored out this has been approved as standard effective September 1, 1950, and approval has been given to an alternate design having a solid hub. Practically all of the wheel manufacturers will be fully equipped to make the cored hub wheel by the effective date but it will be necessary for some manufacturers to furnish at least some present standard wheels for a few months longer to those railroads which will insist on the solid-hub design. The proposed change to the rules on wear limit for chilled-wheel flanges results in an increase of 1/16 in. in minimum flange thickness and a reduction in maximum vertical flange height from 1 in. to ⅞ in. While this proposal might be considered as indicating an increase in chilled-wheel flange failures, this is not the case. On the contrary, as shown by the figures in the committee report, there was a sharp decrease in flange failures during 1949. However, there are indications of an increase in the proportion of thin and vertical flanges involved. This condition is not general throughout the country, but has been more in the form of epidemics on individual railroads. The effect on wheel life should not be serious. Present removals of chilled wheels for worn or vertical flanges amount to about 5 per cent by the condemning and remount rules combined. This will undoubtedly increase, particularly during the first year, but since the number of wheels will be relatively small and since they will also be pretty well worn toward the condemning limit for tread wear, the change would hardly have a measurable effect on overall wheel life. Furthermore these additional wheels removed will be a group in which the incidence of flange failures is apparently quite high.

D. A. Reavis, general foreman, car department, Nashville, Chattanooga & St. Louis, stated that for the period from August through November a total of 49 flange failures were found on his road, and that wheels are often kept in service beyond their economical life. Other roads are having the same trouble. Eight other roads were written to and three said they had this difficulty. One of the other five delivered to the N. C. & St. L. four cars with broken flanges within two months. He thought that all roads should keep records on broken or chipped flanges.

B. M. Brown, general superintendent motive power, Southern Pacific, said that there remains much to be done on passenger-car steel wheels. The Southern Pacific kept accurate records of steel-wheel removals and found thermal cracks to be one big trouble.

A. K. Galloway, general superintendent motive power and equipment, Baltimore & Ohio, said that very little additional wear is gained from the final turning on multiple-wear wheels.

The report was accepted and recommendations referred to letter ballot.

DIESELS ARE IMPORTANT
IN RAILROAD OPERATION

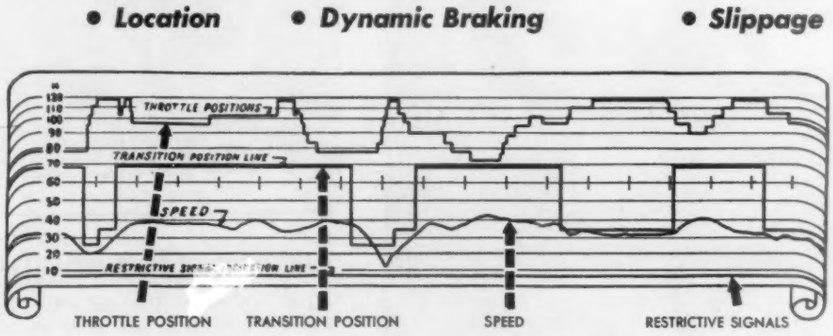
SO ARE RECORDS OF WHAT THESE DIESELS
ARE DOING AND HOW THEY ARE HANDLED

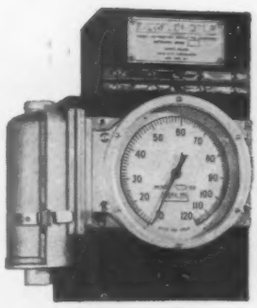
BARCO RECORDERS

PROTECT YOUR DIESELS
GET MAXIMUM RETURNS

BARCO RECORDERS GIVE YOU A COMPLETE,
ACCURATE RECORD OF OPERATION AND PERFORMANCE

- *Speed*
- *Time*
- *Mileage*
- *Location*
- *Throttle Position*
- *Reverse Lever Position*
- *Manual Transition*
- *Dynamic Braking*
- *Overspeed*
- *Forestalling for Automatic Train Stops*
- *Slippage*





BARCO RECORDERS FOR DIESEL AND STEAM PASSENGER,
FREIGHT AND SWITCH ENGINES

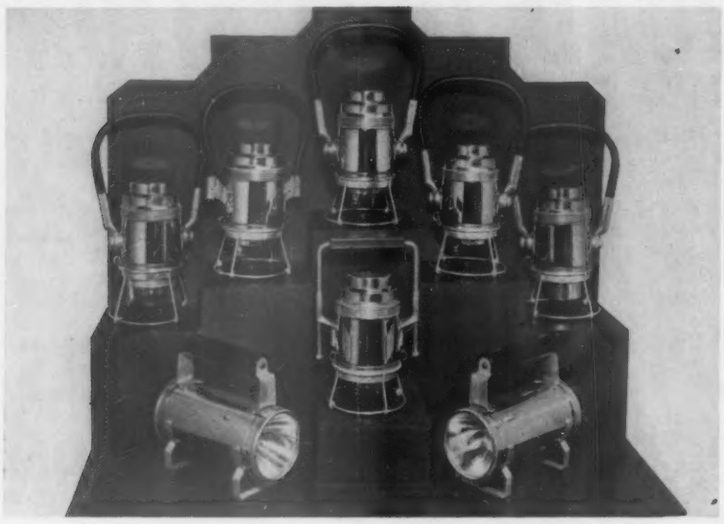
BARCO MANUFACTURING CO.

1800 H. WINNEMAC AVE., CHICAGO 40, ILL.

FREE ENTERPRISE — THE CORNERSTONE OF AMERICAN PROSPERITY

New and Improved Products of the Manufacturers

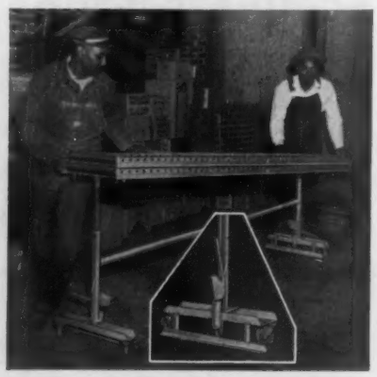
NEW LINE OF RAILROAD LANTERNS AVAILABLE

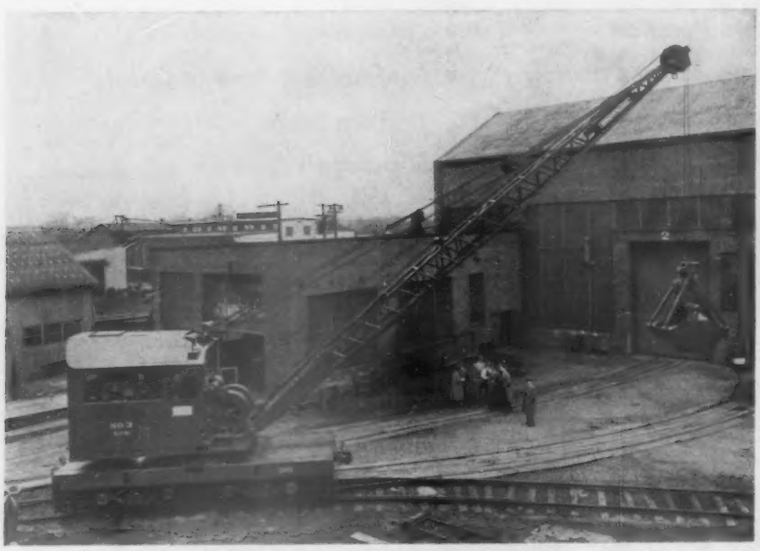


A new line of lanterns for trainmen, checkers and inspectors is offered by the Genesy Electric Lantern Company, Kansas City, Mo. The new products, being marketed after a three-year program of research and testing, retain such features as the nickel-plated brass body, aluminum-reinforced fiber handle, shock-resistant base of cadmium-plated steel, and a cover with two spare bulbs. On all lanterns except those for inspectors, a new patented switch with two "finger-tip" controls is located below handle brackets on each side, making it possible to light either bulb from either side and with the hand holding the lantern. The switch mechanism has a rotary action and is mounted on three ball point bearings.

FLOOR LOCK FOR PORTABLE CONVEYORS

Stability and positive alinement are features claimed for the Pelican floor lock for portable conveyor units, introduced by the Metzgar Company, Grand Rapids, Mich. In locked position, an angle-iron floor bar raises the casters 1/16 in. off the floor and locks the entire end of the unit in position. Three point contact between the floor bar and the caster carriage, to prevent wobbling or twisting, is provided by a spring cylinder and two vertical pins welded to the floor bar near each end. Release of a manually operated cam and lever engages the casters for moving the unit.





BROWNING TORQFLO LOCOMOTIVE CRANE

A locomotive crane featuring a torque-converter drive similar in operation to the automatic transmissions used in automobiles has been announced by the Browning Crane & Shovel Co., Cleveland, Ohio. Known as the Browning Torqflo, the new crane is available in three models, ranging in capacity from 25 tons to 50 tons.

The Torqflo drive is a specially designed hydraulic unit which is reported to provide smooth and fast transmission of power to the travel, swing, hoist and boom-hoist mechanisms. The converter is said always to supply the correct amount of power required for each operation and to absorb hydraulically sudden increases in loads, with the result that wear of the clutches and brakes is held to the minimum. Automatic adjustments of the converter eliminate shocks to the cables, clutches and gear train.

WEED KILLING POWDER

The Chipman Chemical Company, Bound Brook, N. J., is offering a chemical weed killer, known as Clorax Spray Powder, for use where weeds create a fire hazard, as in the vicinity of tie and timber storage yards, oil tanks, and wood bridges. It is a nonseparating composition of sodium chlorate and a special form of borate, which can be applied in its original dry form or dissolved in water for use as a spray.

Designed to kill practically all types of vegetation, Clorax Spray Powder is said also to provide a residual effect in the soil which substantially discourages regrowth. Not only is it reported to create no fire hazard in spite of its chlorate content, but also actually to retard burning.

GENERAL NEWS

Donnell Will Push Anti-Strike Bill

Loomis and Fort testify at hearings' closing sessions

Senator Donnell, Republican of Missouri, said this week he would undertake to have the Senate committee on labor and public welfare act promptly on the bill he is sponsoring to make unlawful any strike or lockout arising out of a dispute within purview of the Railway Labor Act. The bill, S.3463, would eliminate that act's emergency-board provisions and substitute provisions for appointment of "Presidential boards," findings of which would be binding on the parties, though subject to court review.

Senator Donnell's intention to push for prompt committee action was stated by him on July 3, as a subcommittee of the Senate's labor and public welfare committee concluded hearings on the measure. The senator, a member of both subcommittee and parent committee, said he would ask the former to take action at "an early date" to report the bill to the latter. And he will then follow through with an undertaking to have the parent committee report the bill to the Senate.

Thomas, Morse Oppose Bill

Meanwhile, the subcommittee's chairman, Senator Thomas, Democrat of Utah, who is also chairman of the parent committee, indicated his opposition to the bill as did another member of the parent committee—Senator Morse, Republican of Oregon. As the hearings closed, Chairman Thomas said the 1 st two sessions, on June 29 and July 3, had been used as a "sounding board" for expressions with respect to the strike of the Switchmen's Union of North America against five western railroads.

Those sessions were held to hear further testimony from J. Carter Fort. vice-president and general counsel of the Association of American Railroads, and Daniel P. Loomis, chairman of the Western Carriers' Conference Committee, which, with like committees from other regions, is representing railroad management in current wage proceedings. Mr. Loomis, who appeared at the June 29 session, began his statement by calling the switchmen's walkout a "spectacle of another railroad strike against the findings and recommendations of a fact-finding board appointed by the President of the United States." As reported in *Railway Age* of July 1, page 75, Senator Morse said at the same session that labor and management should get together and settle the issues, because "this is no time for a railroad strike in America."

From his reference to the use of the hearings as a "sounding board," Chairman Thomas proceeded to say he would like to be sure that legislation affecting labor-management relations get "real intellectual consideration" in a "sober atmosphere." He warned that legislation on which Congress acts "emotionally" is apt to be "bad" legislation.

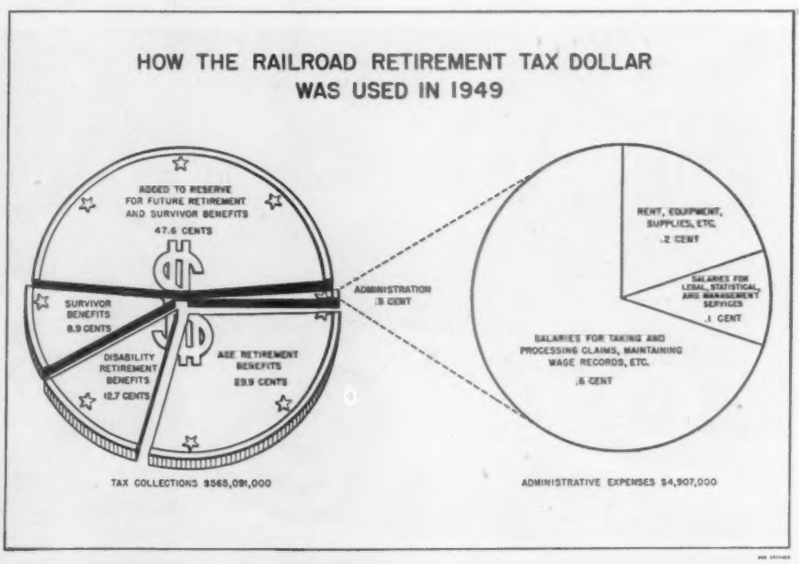
Senator Donnell reminded the chairman the bill was introduced on April 21, and had thus been before the subcommittee 10 weeks and 3 days. The Missourian said he had tried to have the bill considered in April, when there was no "hysteria," and he argued that the current strike situation was no reason for postponing action. Chairman Thomas assured Senator Donnell that his remarks were directed to railroad managements and labor—not to the senator. As the chairman put it, he would say to the railroads and their employees: "Please do not act in such a way that you'll bring impulsive legislation."

Senator Morse said he wanted to join in the chairman's "warning." Somebody, Mr. Morse said, has to "lead with his chin" in the present strike situation; and he was willing to do it. "The carriers," he added, "can't justify saying they'll stand on the emergency board report, and the men can't justify saying they won't settle within the general framework of the report." There is room for mediation, Senator Morse insisted, although he conceded that it was, perhaps, "narrow." He also said the strike could be settled "in five hours" if the parties got together for conferences.

Offer "Doesn't Make Sense"

Earlier in the session, Senator Morse said that, while he did not favor the Donnell bill, he was "much disturbed" by stories to the effect that there had been no move to end the strike. The offer of the Switchmen's Union to see that enough men returned to work to move "critical" materials for the government "doesn't make sense," he continued. "I know too much about railroading to swallow that one," Mr. Morse added. The senator was chairman of an emergency board which investigated a 1941 dispute and mediated a settlement after the involved unions refused to accept its report.

Noting that the Switchmen's union had turned down the National Media-



DESPITE THE MAGNITUDE OF ITS JOB, W. J. Kennedy, chairman of the Railroad Retirement Board, states that the board's running expenses are proportionately lower than those of any similar retirement system. Less than one cent of each dollar collected in retirement taxes in 1949, he said, was needed to run the retirement and survivor benefit programs

tion Board's plea for an ending of the strike, Senator Morse went on to say that President Truman ought to make a statement in the case—"because we are at war." Whatever other terms may be used, Mr. Morse insisted that the country is "at war" when the "American flag is flying in combat." He thinks the President "owes it to the American people to take over" and see that the strike does not set a pattern.

In addition to the comment noted in last week's issue, Senator Morse's statement at the hearings' June 29 session included a suggestion that the committee make a study of the mediation process under the Railway Labor Act. Such investigation, the senator said, should undertake to determine what success the National Mediation Board has had in settling cases prior to a demand for an emergency board; whether there has been lack of confidence in N.M.B. and, if so, whether it has been caused by the board's personnel or procedures; the extent to which carriers and unions have refused to accept proposals made by N.M.B. in its role of mediator; and what proposals N.M.B. has made in "an impartially selected group of cases."

Prefers R.L.A. Amendments

"In other words," Mr. Morse explained, "I want to find out whether or not we are dealing here with a perfectly sound procedure, which mediation is, whether we are dealing here with a breakdown in mediation, because one or both of the parties to these disputes think they have more to gain by letting it go through an emergency board and then rejecting the emergency board's decision if it is not favorable to them, as Mr. Fort has implied in his testimony has apparently been the conduct, as he sees it, of some of the brotherhoods. . . ."

At the same time, Senator Morse expressed again his misgivings about the Donnell bill, saying he was worried about the "growth of governmental intervention." He admitted that he did not have an answer to the railroad-strike problem, but said he might be inclined to consider amendments to the Railway Labor Act which would make appointment of an emergency board less automatic than it now is.

Such amendments would give "somebody" discretion to "pass judgment on the question of whether or not . . . parties to a dispute really have bargained in good faith, really have mediated . . . and actually have reached an honest, irreconcilable difference of opinion." Only then would emergency-board procedures become available under the plan Mr. Morse has in mind. He thinks the plan might cure present conditions under which, as he put it, "we are destroying the operation of mediation."

Senator Morse made much the same statement in a June 29 speech on the floor of the Senate. There Senator Donnell also made a statement, saying he did not think it was his function, nor the function of the committee on labor and public welfare, to advise "either side" in the strike case. His point, as he stated it, was that the Railway Labor Act "is itself at fault," because it permits either party to refuse to accept emergency-board findings.

Aside from its brief outline of the strike situation as of June 29, Mr. Loomis' further presentation on the bill was an undertaking to rebut some testimony which had been offered to the subcommittee by labor leaders. As to the claim that union representatives would be powerless at the bargaining table unless they have the right to strike, Mr. Loomis maintained "with the procedures of the Railway Labor Act for negotiation, mediation, arbitration and investigation by a board appointed by the President, it would seem to follow that they must make some pretty unreasonable demands if the only way they can get them is to hold a gun at the heads of the public and the railroads."

Harrison's Proposals "Ridiculous"

Mr. Loomis termed as "ridiculous" proposals by George M. Harrison, president of the Brotherhood of Railway Clerks, that, in the event of a strike, the government should seize railroads and operate them under arrangements whereby there would be "no profit paid." The Harrison suggestion also contemplated that the government would fix wages and working conditions for the period of government operation.

"As we see it," Mr. Loomis continued, "carrying out this suggestion would put the power in the hands of the railway unions at any time to decide that the railroads should be taken over by the government. . . ." He also raised a question as to how the government would fix wages for the period of government operation—"except by some procedure similar to the fact-finding procedure of Presidential boards unless the union itself is to dictate the terms of employment. . . ."

Mr. Loomis also dealt with charges to the effect that railroads have "refused to bargain in good faith" in "practically all cases of national significance." Such charges were made by Mr. Harrison and D. B. Robertson,

BEFORE AN AUDIENCE comprised of several hundred scientists and engineers, dedication ceremonies took place on June 8 for a new laboratory built by the Portland Cement Association at Skokie, Ill., 16 mi. northwest of downtown Chicago. This new research and development center is said to be the world's largest and most completely equipped laboratory devoted exclusively to research on cement and concrete. Comprising two buildings of architectural concrete, the new center includes more than 30 individual laboratories, with testing equipment ranging from a million-pound compression machine to delicate instruments capable of measuring the surface area of a single grain of cement

president of the Brotherhood of Locomotive Firemen & Enginemen, he recalled. He answered them by citing national settlements made since 1944 with maintenance of way employees, non-operating employees generally, telegraphers, conductors, trainmen, and all five operating unions together. The latter was the 1949 case involving liberalization of vacation arrangements.

As against the Harrison proposal, the "principles" contained in the Donnell bill "seem infinitely preferrable," Mr. Loomis advised the subcommittee. He expressed the opinion that passage of the bill would foster collective bargaining in the railroad industry, because "if union representatives were in a position where they might lose something by not making a settlement in collective bargaining, they would be more ready to bargain and reach a settlement than they are at present."

In the latter connection, Mr. Loomis said the present attitude of the unions is one of taking every offer the carriers make, or every recommendation made in their favor by a fact-finding board, and then saying: "Well we have that; now what more are you going to give us?" He added that, if the unions were not able to reject emergency-board findings, "they would be much more willing to carry on real negotiations, and their tactics at the bargaining table would be far different from those now employed."

Suggest Two Amendments

Mr. Fort suggested two amendments to the bill—one to clarify the situation as to the length of time recommendations of a Presidential board would remain in effect, and the other to establish standards for determining disputed wages and working conditions. The former amendment would specify that a settlement imposed by a Presidential board and upheld by the courts would remain in effect only until changed in accordance with provisions of the Railway Labor Act. Thus, as Mr. Fort explained, the imposed settlement would remain in effect "only for the duration of the failure of the parties to agree" on some other settlement.

The standards which the other amendment would require Presidential boards to consider includes scales of wages paid for similar kinds of work in other industries; relations between wages and the cost of living; hazards of employment; training and skill required; degree of responsibility; character and regularity of employment; and economic conditions in the United States and within the railroad industry.

With such standards specified, Mr. Fort said, "there could be no possible question of unconstitutional delegation of legislative power." As to the charge the bill would be unconstitutional because it provides for compulsory settlement of labor disputes, Mr. Fort said "a railroad is under obligation to continue to operate," and the government "has full authority to compel the performance of that duty."

He further stated, with citations of court pronouncements, that "the public interest and community rights are paramount in labor disputes," and that "there is no constitutional limitation against the compulsory settlement of such disputes." His general contention was that there are no constitutional considerations which would prevent a favorable committee report on the bill. "One of the greatest and most sweeping constitutional powers vested in Congress, and one of the most important duties which is imposed upon Congress," he concluded, "is the protection of the free and uninterrupted flow of interstate and foreign commerce."

Doubts Bill Is Unconstitutional

Any notion that the bill would be unconstitutional "has never seriously come into my mind," Chairman Thomas said. Whether the proposed legislation would be "wise," he added, is "another question." Senator Donnell said he had invited the Railway Labor Executives Association and the American Short Line Railroad Association to suggest standards for inclusion in the bill.

Meanwhile, Senator Donnell has continued the practice he began sometime ago of inserting into the Congressional Record various newspaper and magazine articles and editorials about the switchmen's strike and other railroad labor disputes. Also, he has made in the Senate several speeches about such developments and about his bill.

In one of these speeches, delivered on June 30, he explained the origin of the bill and the help he got in writing it from Mr. Fort and other officers of the railroad industry. Mr. Donnell made the explanation in some detail because, he said, "there has been considerable charge by railway labor newspapers in America of participation of the railroads in this matter, and of the alleged charge that I am a mere tool or agent of the railroads." He wanted it to be "clear," the senator added, that "it was I and not the railroads that initiated the thought of the presentation of legislation of this type on the floor of the Senate."

Mr. Donnell explained that he became interested in the matter last year after reading statements in N.M.B. annual reports to the effect that experience of recent years with respect to strikes "does not bode well for the future of the act." He discussed the matter, Mr. Donnell continued, with a member of the staff of the committee on labor and public welfare, Thomas E. Shroyer. Mr. Shroyer told the senator that "there was one man he thought I could confer with who would be able to give me information of value, and that man was Mr. Carter Fort."

Conferred with Mr. Fort

Senator Donnell said he then conferred with Mr. Fort who seemed to have prepared, or caused to be prepared, " a tentative draft of legislation somewhat, although not precisely, along the lines I had in mind." Mr. Fort brought the draft to his conference with the senator and permitted the latter to keep it, Senator Donnell said. Shortly thereafter, the 1949 session of Congress adjourned, but Mr. Donnell's interest in the matter continued when he returned for the present session, the strike threat in the Diesel case having meanwhile been posed.

He then held additional conferences with Mr. Fort, the senator reported, adding that the A.A.R. vice-president, "at my suggestion, request, and approval, undertook to be of some assistance in formulating the thought which I had suggested." At that time, Mr. Donnell also said, Mr. Fort "was not certain by any means" whether the A.A.R. would favor the proposed legislation. Nevertheless, Mr. Fort "assisted and brought down a redraft of the proposed bill," the senator went on.

He continued to tell of another meeting he had with members of the staff of the Senate's legislative counsel, Mr. Fort, the "general counsel, I think he was, of the Santa Fe Railroad," and "a gentleman from the Southern Railway." Participants in this conference "prepared a redraft of this bill."

Mr. Donnell said he indicated at the time that he would desire to "state on the floor of the Senate the participation that these gentlemen from the railroads had had in regard to this matter." He then added: "Because of the fact that Mr. Fort had no authorization whatever to speak for his association—and I think it was likewise true with respect to the other gentlemen that they had no authority to speak for their railroads—as to whether or not they were favorable to the principle involved, it was suggested that I should not make any statement with respect to that upon the floor of the Senate in presenting the bill."

Senator Donnell then went on to

A.A.R. Board Calls Member Road Meeting on Car Situation

The board of directors of the Association of American Railroads, at its June 30 meeting in Washington, D. C., directed that a meeting of association member roads be called for July 28 at Chicago. The meeting will be for the purpose of considering the supply, condition and use of freight cars.

Other actions taken at the Washington meeting included the election to the board of Wayne A. Johnston, president of the Illinois Central. He succeeds J. B. Hill, retiring president of the Louisville & Nashville. C. McD. Davis, president of the Atlantic Coast Line, who was already a board member, was named to succeed Mr. Hill as a member of the board's executive committee.

point out that any support of the bill by railroad executives came after April 21, the day on which he introduced the measure. He also recalled that, at the opening session of hearings on the bill, he had asked Mr. For about the latter's participation in the drafting. And, Mr. Donnell added, Mr. Fort "stated quite fully and frankly . . . substantially what I have given here this afternoon." The senator went on to say that he wanted the record to be "clear" as to the "participation of the railways" in the writing of the bill; and he invited his colleagues to be "entirely free to ask me for a fuller or more complete statement." No senator accepted the invitation.

1950's Net Income Reaches $133 Million

5-months net railway operating income was $253.4 million

Class I railroads in the first five months of 1950 had an estimated net income, after interest and rentals, of $133,000,000, compared with $131,000,000 in the corresponding period of 1949, according to the Bureau of Railway Economics of the Association of American Railroads. The five-months net railway operating income, before interest and rentals, was $253,374,891, compared with $253,528,070.

Estimated results for May showed a net income of $45,000,000 compared with $32,000,000 for May, 1949. Net railway operating income for the 1950 month was $67,031,547, while in May, 1949, it was $57,505,223. In the 12 months ended with May, the rate of return averaged 2.86 per cent, compared with 4.11 per cent for the 12 months ended with May, 1949.

Gross in the five months of 1950 amounted to $3,444,524,887, compared with $3,633,924,469 in the same period of 1949, a decrease of 5.2 per cent. Operating expenses amounted to $2,765,378,613, compared with $2,967,157,796, a decrease of 6.8 per cent.

Thirty Class I roads failed to earn interest and rentals in the five months, of which 14 were in the Eastern district, one in the Southern region, and 15 in the Western district.

Class I roads in the Eastern district in May had an estimated net income of $19,000,000 compared with $17,000,000 in May, 1949. In the five months, their estimated net income was $47,000,000 compared with $69,000,000 in the same period of 1949. Their net railway operating income in May amounted to $25,102,235 compared with $30,277,247 in May, 1949. Those same roads in the five months had a net railway operating income of $108,401,545 compared with $136,960,409 in the same period of 1949.

Gross in the Eastern district in the five months totaled $1,550,498,746, a decrease of 8.3 per cent compared with the same period of 1949. Operating expenses totaled $1,264,307,134, a decrease of 7.5 per cent.

Class I roads in the Southern region in May had an estimated net income of $7,000,000 compared with $4,000,000 in May, 1949. In the five months, their estimated net income was $35,000,000 compared with $27,000,000 in the same period of 1949. Those same roads in May had a net railway operating income amounting to $11,726,005 compared with $8,416,796 in May, 1949. Their net railway operating income in the five months amounted to $55,421,831 compared with $47,879,462 in the same period of 1949.

Gross in the Southern region in the five months totaled $511,567,257, a decrease of 1.5 per cent compared with the same period of 1949, while operating expenses totaled $392,456,026, a decrease of 4.9 per cent.

Class I roads in the Western district in May had an estimated net income of $19,000,000 compared with $11,000,000 in May, 1949. Their estimated net income in the five months was $51,000,000 compared with $35,000,000 in the same period of 1949. Their net railway operating income in May amounted to $30,203,307 compared with $18,811,180 in May, 1949. Those same roads in the five months of 1950 had a net railway operating income of $89,551,515 compared with $68,688,199 in the same period of 1949.

Gross in the Western district in the five months totaled $1,382,458,884, a decrease of 2.9 per cent compared with the same period of 1949, while operating expenses totaled $1,108,615,453, a decrease of 6.7 per cent.

SIMPLICITY AND ELIMINATION of unnecessary details mark the efficient, new, three-color timetables of the 168-mi. Columbus & Greenville. Conceived by Z. P. Hawkins, traffic manager of the C. & G., the new timetables are designed to indicate to shippers the advantages of cross country shipping over the lines of the Delta route

CLASS I RAILROADS — UNITED STATES

	Month of May 1950	1949
Total operating revenues	$ 745,406,421	$ 741,088,924
Total operating expenses	580,566,624	600,864,076
Operating ratio — per cent	77.89	81.08
Taxes	80,746,674	69,277,231
Net railway operating income (Earnings before charges)	67,031,547	57,505,223
Net income, after charges (estimated)	45,000,000	32,000,000
Five Months Ended May 31, 1950		
Total operating revenues	3,444,524,887	3,633,924,469
Total operating expenses	2,765,378,613	2,967,157,796
Operating ratio — per cent	80.28	81.65
Taxes	353,501,745	346,690,687
Net railway operating income (Earnings before charges)	253,374,891	253,528,070
Net income, after charges (estimated)	133,000,000	131,000,000

Striking Switchmen Still Out— New Rail Strikes Loom

Strike action by the Switchmen's Union of North America, which has rejected the carriers' offer for a 40-hr. week, an 18-cent hourly wage increase and time and one-half for work in excess of 8 hr. a day or 40 hr. a week, in line with a Presidential emergency board recommendation, still had all operations paralyzed on four major western railways, and had crippled service on a fifth line, as this issue of *Railway Age* went to press. The four roads on which operations have been suspended entirely, since 6 a.m. on June 25, are the Chicago, Rock Island & Pacific, the Chicago Great Western, the Denver & Rio Grande Western and the Western Pacific. The Great Northern continues to provide main-line passenger service to the extent outlined in *Railway Age* of July 1, page 79.

Meanwhile, the deadline for two additional strikes nears. The Order of Railway Conductors and the Brotherhood of Railroad Trainmen will be free to call walkouts—either nationally or on selected roads—on and after July 15, depending upon the outcome of interim negotiations and the decision of the general chairmen at a meeting scheduled for July 10 at Chicago. The Railroad Yardmasters of America are also legally free to strike on July 15. The issues are similar for the switchmen, the conductors and trainmen and the yardmasters where the demands affect crafts represented by more than one of the unions.

Negotiations on the issues have been progressed almost continuously at Chi-

cago, where the National Mediation Board, represented by Chairman Francis J. O'Neill and Leverett Edwards, is acting as intermediary for the carriers and the brotherhoods. The negotiators were in session throughout the week-end and all day July 4 in an effort to bring about a settlement to the switchmen's strike, and to forestall the impending work stoppages by the other three unions.

The car service situation has not been jeopardized by the strike. Cars routing to the strikebound roads have been absorbed by the other lines, so that empty cars have not backlogged. At least one of the struck railroads has leased a number of road freight Diesel locomotives to a neighboring railroad, with a provision for "immediate return to owner upon notice."

The system chairmen of the switchmen's union on the Denver & Rio Grande Western and the Western Pacific have attempted to negotiate separate settlements with their respective managements, but it is understood that since the strike was called as a concerted action against the carriers, any agreement that is reached will be made at Chicago through the Carriers' Conference Committee.

House Passes Tax Bill; Would Cut Transport Levies

The House on June 29 passed the excise tax-reduction bill, which includes provisions for a cut, from 15 to 10 per cent, in the tax on amounts paid for the transportation of persons, and a halving of the levy on amounts paid for the transportation of property. The latter would thus become 1½ per cent except in the case of coal where it would be 2 cents per short ton.

In reporting the bill to the House, that body's committee on ways and means estimated that the proposed reductions in transport taxes would bring annual savings of $75 to travelers and $165 million to shippers. There are also in the bill provisions for increased corporate income taxes which are expected to yield approximtaely $433 million a year. The measure, H.R. 8920, is now before the Senate committee on finance which has indicated its plan to report its version to the Senate this month.

Truman Says Strikers Should Go Back to Work

President Truman said at a July 6 press conference that striking members of the Switchmen's Union of North America should have returned to work on the five involved western roads when the National Mediation Board asked them to do so. The President added that he hoped it would not be necessary to take drastic action to force the strikers to return to their jobs.

These statements were included by Mr. Truman in response to a question as to whether he had any comment on the strike situation. He led up to them by saying that the strike had been brought about by a small minority of switchmen; that it was unjustified; and that the men ought to go back to work because a very able emergency board passed on their case.

In further comment the President said that the strike was tying up five main railroad lines, two of which were absolutely essential for the movement of the wheat crop and shipments of cattle. In response to a question as to whether movements of war materials were affected, the President replied in the negative, saying that the shipments affected were domestic traffic.

Later on Mr. Truman was asked if the strikers should go back to work as a patriotic duty, or to carry out the objectives of the Railway Labor Act. He replied that they should do so to carry out the objectives of the act, adding that, by the way, that was also a patriotic duty.

Parmelee Drivers Strike; Passengers Use Taxicabs

A strike of 250 drivers of the Parmelee Transportation Company, Chicago, has completely stopped the company's passenger and baggage transfer service between the city's eight principal railroad passenger terminals. The strike, called by Local 725 of the A.F. of L. International Brotherhood of Teamsters in connection with a pay-raise demand, has also affected the entire operation of the company's subsidiary, Continental Air Transport, which handles airline passengers between the downtown "loop" district and the municipal airport. Railroad passengers are being handled by taxicabs between stations with little delay and the interdepot transfer of baggage is being undertaken by the railroads themselves with scheduled "baggage trains" being operated daily. Aside from a considerable number of transfer-charge refunds being given to through passengers at station ticket offices, the strike has not resulted in any material inconvenience to railroad passengers. Negotiations for settlement of the issues of the strike are currently at a stalemate.

Donnell Bill Opposed by Pacific Northwest Board

A resolution opposing Senate Bill 3463 was passed by the Pacific Northwest Advisory Board at its last regular meeting, in Seattle, Wash., on June 22. The bill—introduced by Republican Senator Donnell of Missouri on April 21—is designed to amend the Railway Labor Act to make strikes or lockouts unlawful, and to provide for compulsory arbitration of disputes involving wages or working rules. The board, in placing itself on record as opposed to the bill stated that, desirable as elimination of work stoppages may be, the bill placed in the hands of government matters which should be confined to management and labor.

A less specific action was taken by the Southeast Shippers Advisory Board at its recent meeting in New Orleans. Following a talk by Assistant Vice-President C. D. Mackay of the Southern (see *Railway Age* of June 24, page 108), who spoke of problems confronting railroad management along the labor front, the board passed a resolution which said, in part: "These strikes are not against the railroads; they are against the public, and it is the shipping public that suffers. We are in full sympathy with the efforts

NEW FACILITIES for the Railway Express Agency are being constructed adjacent to the Davenport, Iowa, passenger station of the Chicago, Rock Island & Pacific. The two-story building, which is being built by outside contractors, will serve as both a garage and office for the express company

of the railroads to meet their labor problem head-on, and not to be timid about any further strikes. The shippers will back them up in every way, shape and form."

Illinois Central Sued Over Train Discontinuance

A suit, the first of its kind filed by the Illinois Commerce Commission in many years, has been brought against the Illinois Central for alleged violation of the state's public utilities act by discontinuance of two semi-local trains between Chicago and Carbondale, Ill. Attorneys for the commission said the alleged violation lasted 45 days and that the railroad could be subject to a fine of $2,000 a day.

The railroad said trains 29 and 30, known as the "Illini," were discontinued during the last coal miners' strike, and that the service was protected by additional stops added to schedules of remaining trains. D. R. LeRoy, chief statistician for the road, told the commission on June 29 that, since the trains were restored on June 14, operating costs had totaled $16,500, while revenue produced by the trains came to only $5,350, adding that the railroad had lost $134,500 through operation of the trains, in 1949. The Illinois Central is now seeking to discontinue the trains permanently.

Proposed New Court Rule Could Affect Georgia Case

Representative Combs, Democrat of Texas, has introduced a bill which would amend the United States Code "to require that cases in which the Supreme Court has original jurisdiction be decided by the affirmative vote of at least five members of the court." The bill is H.R. 8940.

The anti-trust complaint brought by the state of Georgia against 20 eastern and southern railroads is a case in which the Supreme Court has assumed original jurisdiction. Recently it received from Lloyd K. Garrison, the special master whom it appointed to hear the case, a report recommending dismissal of the complaint. (See *Railway Age* of June 17, page 73.) The rule proposed by the Combs bill would not apply to court orders which did nothing but dismiss a case.

Great Lakes Shippers Want More Cars

A resolution urging "that the board of directors of the Association of American Railroads, and the railroads within the Great Lakes Board territory specifically, give serious consideration to ways and means of correcting the freight car situation in order to remove the necessity of government assuming additional managerial functions in operating railroads," was adopted by the Great Lakes Regional Advisory Board at its June 27-28 meeting in Detroit, Mich.

The resolution, supported by a forecast of an increase of 16.6 per cent in the number of cars to be loaded in the Great Lakes area in the third quarter of 1950, compared with the same period of 1949, also recommended "that the carriers . . . be urged to immediately purchase and repair cars positively needed in order to adequately serve industry."

Andrew H. Brown, traffic commissioner of the Cleveland, Ohio, Chamber of Commerce, reporting as chairman of the board's legislative committee, recommended "with some hesitation" that the board "approve in principle" the Donnell bill and oppose the so-called "union shop" bill. Mr. Brown expressed the belief that "we are approaching a time when revolutionary proposals will be made and a fundamental readjustment of our existing transportation legislation will result."

Board President R. W. Wettstyne, general traffic manager of the Firestone Tire & Rubber Co., presided at the meeting, while the principal speaker was G. Mennen Williams, governor of Michigan, who discussed the state's plan for civilian defense and the need for a bridge across the Straits of Mackinac.

W. J. McGarry, manager of the Ore and Coal Exchange of Cleveland, predicted an all-rail movement of five million tons of iron ore, while W. E. Callahan, manager of the Car Service Division of the A. A. R., painted a "tight" picture of the nation's freight car situation.

LOUIS S. ST. LAURENT, Prime Minister of Canada, takes a turn at the throttle of the Canadian National-Grand Trunk's "International Limited" on the occasion of the train's 50th anniversary of service between Montreal and Chicago

Truck Group Plan to Change Regulatory Set-Up Opposed

Wilbur La Roe, Jr., member of the Washington, D. C., law firm of La Roe, Brown & Winn and a practitioner before the Interstate Commerce Commission, appeared last week before the Senate's subcommittee on domestic land and water transportation to oppose changes in the federal plan of regulating transportation which is advocated by American Trucking Associations. Among other proposed changes, the A.T.A. plan, as reported in the *Railway Age* of June 24, page 106, contemplates transfer of "administrative" phases of regulation to the executive branch of the federal government.

Mr. La Roe said he regarded the proposal as "dangerous," because it is "participation by the executive branch" that is "most apt to inject politics into regulation." His statement continued as follows:

"The independence of the Interstate Commerce Commission must at all cost be preserved. This proposal to supplant the finest regulatory body in America, responsible only to the people through Congress, by another agency or agencies linked with the Administration and therefore with politics, strikes a blow at the greatest transportation system in the world. It is ironical that this proposal . . . should emanate from an industry that was rescued from complete chaos by the Interstate Commerce Commission."

Mr. La Roe said he had been authorized to state that his presentation was endorsed by 15 companies and organizations, including the American Paper & Pulp Association; Commerce and Industry Association of New York; National Independent Meat Packers Association; North Atlantic Ports Conference; and Shippers Conference of Greater New York.

The subcommittee, a unit of the Senate committee on interstate and foreign commerce, is headed by Senator Myers, Democrat of Pennsylvania. It heard Mr. La Roe at the June 29 session of hearings in connection with studies it is conducting pursuant to Senate Resolution 50. Also at that session, the commissioner of the U. S. Bureau of Public Roads, Thomas H. MacDonald, proceeded with the comprehensive presentation he began at the June 27 session. (See *Railway Age* of July 1 page 67.)

Will Consider Discontinuing Water-Competitive Rate Cases

Interested parties have been invited by the Interstate Commerce Commission to submit their views on a railroad proposal that the commission discontinue three water-competitive rate cases which it instituted in late 1946 and 1947 at request of the former United States Maritime Commission. The proceedings are: No. 29663, Transcontinental Rail Rates; No. 29664, Intercoastal Water Rates; and No. 29708, All-Water, Water-Rail, and Rail-Water Rates Between Pacific Coast Ports and Interior Points.

The presentation on the proposed discontinuance must be filed on or before August 31, according to a notice issued by I.C.C. Secretary W. P. Bartel. The notice advised that the commission was thus getting around to action on a petition filed more than two years ago (on February 16, 1948) by transcontinental railroads. The petition based its request for discontinuance on a contention that the situation in the light of which the water-competitive

rate investigations were instituted had "substantially changed" as a result of Ex Parte 162 and 166 increases in railroad rates.

As Mr. Bartel noted, there has since been another general increase—in the Ex Parte 168 case. In view of these developments, he added, "it appears that further consideration should be given" to whether the three investigations should be discontinued.

Freight Car Loadings

Carloading figures for the week ended July 1 were not available when this issue went to press.

Loadings of revenue freight for the week ended June 24 totaled 810,152 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, June 24

District	1950	1949	1948
Eastern	143,762	138,143	168,822
Allegheny	165,704	164,134	183,552
Pocahontas	58,908	64,571	69,738
Southern	121,644	114,129	136,126
Northwestern	131,337	132,579	135,469
Central Western	127,606	128,760	137,945
Southwestern	61,191	60,625	66,716
Total Western Districts	320,134	321,964	340,130
Total All Roads	810,152	802,941	888,368
Commodities:			
Grain and grain products	50,718	64,884	52,491
Livestock	7,709	6,827	8,928
Coal	145,422	171,510	191,963
Coke	15,067	12,158	14,325
Forest products	47,371	40,092	49,642
Ore	79,617	80,665	80,626
Merchandise l.c.l.	81,984	91,222	104,978
Miscellaneous	382,264	335,583	385,415
June 24	810,152	802,941	888,368
June 17	805,680	649,351	906,631
June 10	795,852	808,156	905,663
June 3	709,587	698,824	821,206
May 27	780,959	784,824	904,757
Cumulative total 25 weeks	17,103,906	18,092,900	20,070,232

In Canada.—Carloadings for the week ended June 24 totaled 82,200 cars, compared with 79,919 cars for the previous week, and 75,352 cars, for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 24, 1950	82,200	33,676
June 25, 1949	75,352	29,403
Cumulative totals for Canada:		
June 24, 1950	1,794,451	766,571
June 25, 1949	1,813,651	789,226

European Rail Officers To Study U. S. Methods

Railroads in this country are cooperating with the Economic Cooperation Administration in arranging an American tour for about 75 top railway officers from some 10 or 11 European countries. Present plans contemplate that the visiting railroaders will arrive in this country sometime in September.

They will include such officers as chief engineers and chief operating officers, and their objective will be to study the latest American railroading methods and techniques with special reference to the applicability to railroads in Europe. It is understood that the arrangements contemplate payment to U. S. roads for transporting the visitors. L. E. Dale, assistant to vice-president, Operations and Maintenance Department, Association of American Railroads, is the project director for the railroads.

Transport Corps Becomes Permanent Part of Army

The Transportation Corps became a permanent part of the United States Army on June 28 when President Truman signed a recently enacted bill, H.R. 8198, embodying the Army Organization Act of 1950.

A statement issued by the Office of the Chief of Transportation hailed the legislation as marking "the first time in the history of the Army that a permanent Transportation Corps has become a basic branch of service." The statement added that "twice in three decades, the overwhelming logistical requirements of two World Wars have led to the creation of an Army Transportation Corps of its equivalent.

The corps, as now set up, was organized in 1942, and war-powers legislation provided authority for maintaining it until the present act was passed. The present chief of transportation is Major General Frank A. Heileman. He is the third to hold the office. The first, who served during the war period, was Major General Charles P. Gross. When General Gross retired in November, 1945, he was succeeded by Major General Edward H. Leavey. General Heileman took over in June, 1948, when General Leavey was appointed Army comptroller.

Major facilities of the Transportation Corps include ports of embarkation at New York, San Francisco, Cailf., Seattle, Wash., and New Orleans, La.; shops for the maintenance of railroad equipment at Baltimore, Md., and Ogden, Utah; and storage depots at Marietta, Pa., and Stockton, Calif. The corps also conducts a transportation training school at Fort Eustis, and Fort Story, Va.

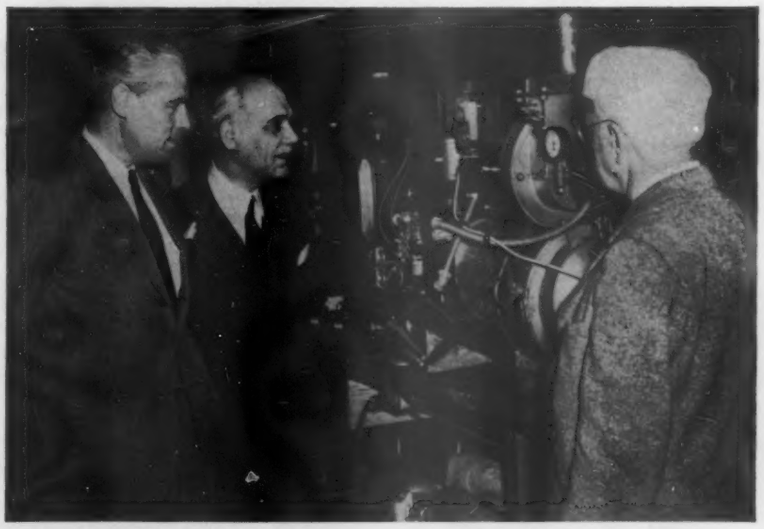
Waybill Studies

Two additional waybill studies have been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. They are: Statement No. 5027, Distribution of Petroleum Products by Petroleum Administration Districts—Fourth Quarter 1949; and Statement No. 5029, Distribution of Freight Traffic and Revenue Averages by Commodity Classes—Terminations in 1949.

I.C.C. Will Hear Argument On Suspended L.C.L. Tariffs

The Interstate Commerce Commission will hear oral argument July 11 at Washington, D. C., on two l.c.l. tariffs which it suspended for five weeks after Official-Territory railroads had filed them as a proposed "compromise settlement" of the long-pending "L.C.L. Case." The proceeding is I. & S. No. 5811, and the present suspension order is scheduled to expire July 24.

The oral argument, the commission's notice said, will be for the purpose of hearing presentations of interested



MANY SLEEPING CARS in Europe are equipped with three kinds of heating systems using electricity, hot water and steam, different systems being used on the same trip as cars travel through different countries. The Vapor Heating Corporation, Chicago, has designed a new single hot water heater to be installed in or under sleeping cars of the Cie. Internationale des Wagons-Lits et des Grands Express Europeens, Paris, France, which operates sleeping and dining cars in many European countries. Examining the new heater are, from the left, Andre Widhoff, assistant director general, and Albert Pillepich, chief engineer of "Wagon Lits," and O. A. Rosboro, vice-president in charge of foreign sales of Vapor Heating Corporation

parties on these matters: (1) Whether the present suspension should be vacated, or if it should be permitted to expire July 24 and the proceeding discontinued; (2) whether the tariffs should be further suspended, (3) whether the investigation should be continued in the event the tariffs are not further suspended. (See *Railway Age* of June 24, page 126.)

Three RR Presidents on U. S. Chamber Transport Committee

C. McD. Davis, L. C. Sprague and R. L. Williams, presidents, respectively, of the Atlantic Coast Line, the Minneapolis & St. Louis and the Chicago & North Western, have been appointed to memberships on the Transportation and Communication Committee of the Chamber of Commerce of the United States. Mr. Williams is a new member, Messrs. Davis and Sprague having served on the committee last year when the third representative of the railroad industry was R. B. White, president of the Baltimore & Ohio.

The committee has 34 members, and its chairman is Evans A. Nash, president of the Yellow Transit Company, Oklahoma City, Okla., who served in the same capacity last year. Other members of the committee include A. L. Hammell, president of the Railway Express Agency, and M. Forgash, president of the Universal Carloading & Distributing Co., both of whom were reappointed. A.C.L. President Davis is also one of the transportation members of the chamber's board of directors.

See Third-Quarter Loadings 9.3 Per Cent Above 1949

Freight car loadings in the third quarter of 1950 are expected to be 9.3 per cent above those in the same 1949 period, according to estimates of the 13 Regional Shippers Advisory Boards. On the basis of those estimates, loadings of the 32 principal commodity groups will be 7,644,826 cars in the third quarter, compared with 6,992,722 actual loadings for the same commodities in the corresponding period last year.

All boards, except the Central Western, Trans-Missouri-Kansas and Southwest, forecast increases. The accompanying tabulation shows actual loadings for each district in the third quarter of 1949, the estimated loadings for the third quarter of 1950, and the percentage of increase.

Board	Actual Loadings Third Quarter 1949	Estimated Loadings Third Quarter 1950	Per Cent Difference
New England	94,613	95,062	+ 0.5
Atlantic States	746,955	786,173	+ 5.3
Allegheny	698,804	920,725	+31.8
Ohio Valley	688,317	799,291	+16.1
Southeast	781,076	832,454	+ 6.6
Great Lakes	600,084	699,803	+16.6
Central Western	270,679	262,909	— 2.9
Mid-West	809,398	872,533	+ 7.8
Northwest	801,778	856,452	+ 6.8
Trans-Missouri-Kansas	403,858	400,269	— 0.9
Southwest	488,521	480,177	— 1.7
Pacific Coast	347,714	360,848	+ 3.8
Pacific Northwest	260,925	278,130	+ 6.6
Total	6,992,722	7,644,826	+ 9.3

The boards expect an increase in the loading of 20 of the commodities listed and a decrease in 12. Among those showing increases are: Coal and coke, 24.3 per cent; automobiles and trucks, 20.1 per cent; vehicle parts, 17.9 per cent; citrus fruits, 15.7 per cent; ore and concentrates, 14.3 per cent; iron and steel, 10.5 per cent; other metals, 10.2 per cent; lumber and forest products, 9.4 per cent; lime and plaster, 8.8 per cent; cement, 7.7 per cent; brick and clay products, 7.5 per cent; paperboard and prepared roofing, 6.7 per cent; chemicals and explosives, 6 per cent; gravel, sand and stone, 5.6 per cent; and sugar, syrup and molasses, 5.1 per cent.

Commodities for which decreases are estimated include the following: Grain, 10.3 per cent; potatoes, 5.9 per cent; fresh fruits, other than citrus fruits, 5.7 per cent; poultry and dairy products, 4.3 per cent; cottonseed, soybean-vegetable cake and meal, excluding oil, 3.3 per cent; hay, straw and alfalfa, 3.0 per cent; fertilizers of all kinds, 2.9 per cent; and cotton, 2.3 per cent.

Emergency Board Named In Lake Dock Disputes

President Truman on July 3 issued executive orders creating emergency boards to investigate disputes involving dock personnel at Lake Erie ports who went on strike June 17. The strikers, represented by the International Longshoremen's Association, American Federation of Labor, are employees of the Toledo, Lorain & Fairport Dock Company and the Toledo Lakefront Dock Company.

The former is an affiliate of the Baltimore & Ohio, while the latter operates joint facilities of that road and the New York Central. The President appointed the same personnel to both boards, naming Robert G. Simmons, chief justice of the Supreme Court of Nebraska, Joseph L. Miller, labor relations consultant of Washington, D. C., and Dudley E. Whiting, attorney of Detroit, Mich. They were scheduled to meet with the parties in Toledo, Ohio, on July 6; but it was understood that the board did not plan to begin formal hearings while the strike continues. The dispute involves wages and working rules.

Commissioner Patterson Reaches Retirement Age

William J. Patterson's service as a member of the Interstate Commerce Commission appeared to have been brought to an end June 30 by requirements of the Civil Service Retirement Act. That act stipulates that a government employee who has had 15 years of service must retire at the end of the month during which he becomes 70 years of age, although the President may grant exemptions by executive order.

Mr. Patterson became 70 years of age on June 4, and he had more than 15 years of government service at that time, having joined the I.C.C.'s staff in 1914.

Up to July 5, President Truman had issued no executive order exempting Mr. Patterson from the retirement provisions; and it was understood that Mr. Patterson had not participated in commission activities after June 30.

Meanwhile, however, there was uncertainty as to whether the retirement act required that Mr. Patterson be given 60 days formal notice of the compulsory-retirement rule. The rule stipulates that such notice must be given to an "employee" of a government agency, including independent offices, but this notice provision does not use the term "officer," which is coupled with "employee" in other parts of the rule. Rulings of the Civil Service Commission have held that the notice provisions would not apply to a government "officer."

Also, there has been discussion of another ruling in a retirement case, which held in effect that a Presidential action, giving an appointee a specific term extending beyond the time when the appointee became 70 years of age, amounted to an exemption of the appointee from the retirement rule for the term involved. That ruling was made before 1946, when members of the commission became subject to the retirement act; and, in recent years, commissioners who continued to serve after reaching the age of 70 years have done so pursuant to Presidential orders specifically exempting them from the retirement rule. The term which Mr. Patterson has been serving runs until December 31, 1952. He became a member of the commission in 1939 and was reappointed in 1945. He had previously served for 25 years as a member of the staff of the commission's Bureau of Safety, rising to the directorship of that bureau.

In response to an inquiry, it was stated at Mr. Patterson's office on the forenoon of July 6 that he had not filed an application for retirement.

I.C.C. Holds Memorial Service For Late Commissioner Miller

The Interstate Commerce Commission on June 30 held a memorial service for the late Commissioner Carroll Miller, who died December 24, 1949, after 16½ years of service on the commission. The memorial service was held in one of the main hearing rooms at the commission's Washington, D. C., headquarters, with present members of the commission sitting in formal session to hear tributes to their late colleague.

The service was opened when Commissioner Aitchison, presiding in the absence of Chairman Johnson, recognized Roland M. Rice, president of the Association of Interstate Commerce Commission Practitioners. Mr. Rice introduced the chairman of the association's committee on resolutions, E. H. DeGroot, Jr., who read a resolution of

tribute which had been adopted by the association. He moved that the resolution be embodied in the permanent records of the commission.

Commissioner Aitchison then recognized D. W. Knowlton, chief counsel of the commission, who supported Mr. DeGroot's motion and spoke about Mr. Miller's life and work on the commission. The late commissioner, Mr. Knowlton said, was "greatly loved and profoundly respected by all who knew him"; he brought "great helpfulness to the councils of the commission," having been "well fitted" for the role by specialized education and experience in "important positions" in the public utility field.

In receiving the association's resolution, Commissioner Aitchison noted that the commission also had in the records its own resolution, adopted shortly after Mr. Miller's death. He also read an expression of sympathy which the commission received from President Truman at that time. And he went on to pay his own brief tribute to his late colleague, calling Mr. Miller one who brought "unique equipment and talents to the public service."

The crowd on hand for the service taxed the normal capacity of the hearing room. Among those attending were members of Mr. Miller's family, members of the commission's staff, public officials, practitioners, and railroad executives. The latter included W. T. Faricy, president of the Association of American Railroads, his predecessor in that position, R. V. Fletcher, J. M. Hood, president of the American Short Line Association, and several railroad presidents who were in Washington for the A.A.R. board meeting held earlier the same day. A photograph of Mr. Miller, and an article on his career, was published in *Railway Age* of January 7, page 272.

Carney Heads Claim Agents

K. A. Carney, chief claim agent of the Illinois Central, was elected president of the Association of Railway Claim Agents at the organization's 61st annual meeting, held in Kansas City, Mo., June 21-23. He succeeds E. N. Muldoon, general claim agent of the Chicago North Shore & Milwaukee.

W. J. Crecelius, general claims agent, Louisville & Nashville; F. O. Divisek, chief claim agent, Denver & Rio Grande Western; and F. H. Hitchcock, general claim agent, Atchison, Topeka & Santa Fe, Coast Lines, were elected vice-presidents. F. L. Johnson, general claim agent, Gulf, Mobile & Ohio, was re-elected secretary-treasurer.

The association voted to hold its 62nd annual meeting in 1951 at Biloxi, Miss., and made tentative arrangements to hold its 63rd annual meeting, in 1952, at Montreal, Que.

The program for the Kansas City meeting included an address of welcome by Mayor William Kemp; a response by J. M. Prickett, vice-president, labor and public relations, of the Kansas City Southern, and reports on the following topics: Adequate preparation for trial with the aid of the claim department, by Douglas Moir, trial attorney, Chicago; Emotional factors in physical disease and injury, by Dr. D. B. Foster, Menninger Foundation, Topeka, Kan.; Photography in claim investigation, by John G. Blank, claim agent, Canadian National; The handling of defendant's witnesses at pretrial conferences and relation of the claim agent thereto, by Roscoe Anderson, attorney, St. Louis-San Francisco; Actuarial studies of life expectancy of railroad and industrial employees, by Thomas Cluley Smith, estate engineer, Chicago; Rehabilitation in the broadest sense, by Mr. Carney; and Unusual cases I have handled, by R. T. Pruitt, claim agent, L. & N., Paul W. McCown, chief claim adjuster A.T. & S.F., Coast Lines, D. W. McHugh, claim agent, Chicago, Rock Island & Pacific, and G. E. Elliott, assistant chief claims agent, C.N.

N. J. Historical Society Plans Transport Collection

In cooperation with the Railroadians of America, the New Jersey Historical Society has announced plans for development of a permanent collection of museum and library material portraying the history and development of transportation in the United States.

The collection—said to be the first permanent one of its kind in the New York metropolitan area—will include such museum items as locomotive bells, headlights, lanterns, signals, models, maps, tickets, passes, advertisements, drawings, photographs, prints and lithographs, and such library material as books, pamphlets, reports and corporate records. Data relating to canals, waterways and toll roads will also be included.

Plans for the collection have been reviewed and approved by R. S. Henry, vice-president, public relations, of the Association of American Railroads, according to N. J. H. S. President C. B. Bradley, who is counsel and a director of the United New Jersey Railroad & Canal Co., which is operated under lease by the Pennsylvania. Development of the collection will be under supervision of a special transportation committee. Anyone interested in contributing to, or taking part in, the project is invited to write to that committee in care of the society at 230 Broadway, Newark, N. J. It is requested, however, that no material be sent to the society until the committee has advised the donor to do so.

Conway Resigns as Resources Board's Transport Director

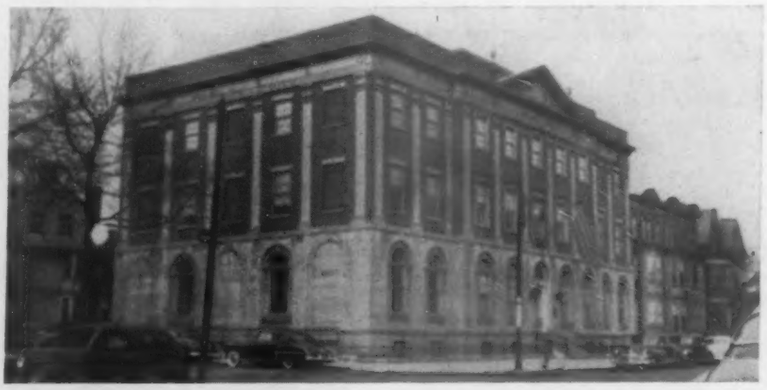
Captain Granville Conway has resigned as director of the Transportation Office of the National Security Resources Board, and Colonel Alvin B. Barber has been appointed acting director. This was announced June 29 by N.S.R.B. Chairman Stuart Symington, who said that Captain Conway would continue to serve the board in an advisory capacity.

Colonel Barber, who has been associate director of the Transportation office, joined the N.S.R.B. staff in August, 1948. He was formerly manager of the Transportation and Communication Department of the Chamber of Commerce of the United States. Captain Conway served during World War II as deputy administrator and administrator of the War Shipping Administration.

Some Restrictions Lifted From S.P. Truck Operations

Reporting on further hearing in a case involving the Southern Pacific Transport Company's trucking operations which parallel lines of the Texas & New Orleans, Division 5 of the Interstate Commerce Commission has eased some of the conditions previously imposed to insure that the highway services remain auxiliary to T.&N.O. rail services. The report, dated June 14, was in No. MC-30319.

It modified the originally-prescribed "key-point" condition to eliminate some of the stations named as key points, i.e., points between which trucking service is prohibited. Also, it eliminated



Walter A. Lucas

THE NEW JERSEY HISTORICAL SOCIETY'S transportation collection will be permanently housed in the society's headquarters at 230 Broadway, Newark

DEDICATION CEREMONIES for the first of eight new 2,000-hp. road Diesels recently purchased by the Long Island from Fairbanks, Morse & Co., were conducted at Jamaica, N. Y., on June 12, by David E. Smucker, trustee and chief operating officer of the L. I. Left to right in the picture are Palmer S. Mock, superintendent motive power, L. I.; Lester C. Tichy, designer who created the new color scheme for L. I. Diesel passenger locomotives and passenger cars; Mrs. Victor H. Peterson, wife of manager, Railroad division, Fairbanks, Morse; James G. Graham, sales manager, Fairbanks, Morse; Mrs. Graham, Mrs. Smucker, Mr. Smucker, Engineman James T. Gerety, L. I. Superintendent Horace B. Stetson and Mr. Peterson. Seven other similar engines will be delivered to the L. I. later, permitting retirement of nine steam locomotives

a requirement stipulating that shipments handled by truck could be only those which Transport received from or delivered to the T.&N.O. "under a through bill of lading or express receipt. . . ."

The latter modification will permit Transport to handle freight-forwarder and pool-car shipments. It had been construing forwarder billing as a "through bill of lading" within the meaning of that phrase as used in the involved condition, the commission's report noted. It added, however, that the "error of such an interpretation" was conceded by Transport during the course of the present proceeding.

Derailed by Broken Wheel—Cracks Originated in Stencils

Failure of a carbon-steel locomotive wheel, which broke as a result of cracks originating in stencil marks, caused the April 20 derailment of a Union Pacific freight train near Walnut, Cal., according to a report of the Interstate Commerce Commission. The report, by Commissioner Patterson, based on an investigation conducted by the commission's Bureau of Locomotive Inspection, said in part:

"Experience has demonstrated that cuts, gouges, nicks, tool marks or similar surface defects in carbon steel machine members subject to high stresses will often result in progressive fractures of a fatigue character. Evidence in the subject accident indicates that the stencil marks in the wheel rim acted as stress raisers at concentration points where cracks started due to over-stressing or because the fatigue life of the material had been exceeded."

The involved wheel was under the third unit of a four-unit Diesel-electric locomotive which was hauling a 4,845-ton, westbound train of 77 loaded cars at a tape-recorded speed of 59 m.p.h., 9 m.p.h. in excess of the 50 m.p.h. limit for freight trains in the territory. The Diesel unit was designed for a maximum speed of 65 m.p.h.

The accident, which occurred on a tangent stretch of track at Fallon Spur, 2.1 mi. west of Walnut, resulted in derailment of the affected pair of wheels under the Diesel unit and 41 cars of the train. Two trespassers who were riding in one of the derailed cars were killed. With the exception of damage done by the derailment, the track was "in good condition and well maintained," the report said.

The Diesel unit on which the wheel broke was 1614-C, designed to be used as a trailing or intermediate unit. The wheel which failed was the left rear wheel with respect to the direction of movement. The commission's investigators found that the failure "apparently" occurred while the train was near Walnut, 2.1 mi. east of the point of derailment, since five pieces or the entire rim section were later found there; and continued to say:

"The sub section that remained on the axle slid on top of the rail to Fallon Spur where damage to and displacement of a frog occurred. The right rear wheel on unit 1614-C was derailed. All wheels of the following unit and all wheels of the first car in the train remained on the rails. One pair of wheels in the leading truck on the second car were derailed and the rear truck on the third car was derailed.

"The four locomotive units with the first three cars attached continued forward for 1,550 ft., marking the ties where the derailed wheels did minor damage to the track. The track was completely torn up or badly damaged for a distance of 351 ft. from the frog at Fallon Spur. The 39 cars following the three described were derailed, turned over, badly damaged, and piled up in a space of 264 ft. Four tank cars containing caustic soda were ruptured and the contents spilled on the ground. Many other cars were damaged or torn open and their contents scattered and mixed with the wreckage. Twenty-three of the 41 derailed cars were beyond repair and were condemned for destruction."

Damage to unit 1614-C, in addition to the broken wheel, was minor. The other locomotive units were not damaged and no slid spots were found on any wheels except the mate to the broken wheel.

Unit 1614-C was of the B-B type, built by the American Locomotive Company in December, 1947. Its 4-wheel equalizer trucks had a General Electric Company type 752 traction motor driving each pair of wheels, which were 40 in. in diameter when new. The weight of the unit was 235,200 lb., its gear ratio was 74 to 18, and it was equipped with a dynamic brake, with type 24RL brake equipment.

The wheel which failed was a Class BR, heat-treated, rolled-steel wheel, 40 in. in diameter and having a rim thickness of 2½ in. when new. It came to the U.P. under a Diesel unit built in August, 1948, and it had been turned twice to remove a flat spot and flange wear when it was applied to unit 1614-C on September 27, 1949. At that time the rim thickness was 2 in. and the wheel and its mate were examined by the magnaflux process. On January 10, 1950, the unit was in the shop at Los Angeles, Cal., and the pair of wheels were given rolling inspection while the truck was out. They were found to have 1/16-in. tread wear.

On the rim of the wheel these data were hot stenciled: "6-47 BETHLEHEM 6715 56T211 BR AAR NW ST." The word "BETHLEHEM" was in letters 9/16 in. high and the numerals and other letters were ¾ in. high, all approximately ⅛ in. deep. Laboratory examination and tests of the failed parts by the U.P. and other evidence led the commission to conclude that the primary fracture developed in the stem of the letter "T" which was the final character stamped on the wheel rim.

"Two secondary fractures [the report continued] occurred through the rim; one through the figure '1' of the serial number and the other through the figure '1' of the heat number where progressive fractures ⅜ in. deep and 1 3/16 in. wide and 7/16 in. deep and 1 3/16 in. wide, respectively, were found. Cracks from ⅛ in. to 1⅛ in. in length were also found in 13 other stenciled characters. No cracks were found from the letters of the 'Bethlehem.'"

The mate wheel which bore similar

(Continued on page 108)

"CLEAR THE TRACK" FOR LOWER HANDLING COSTS

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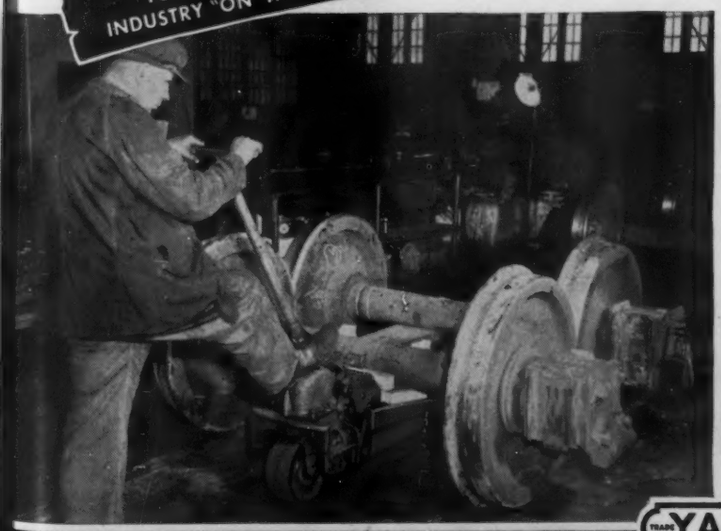

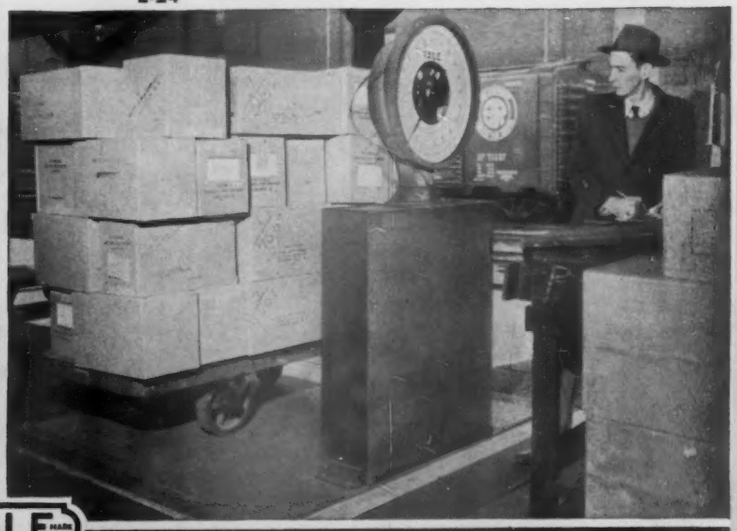

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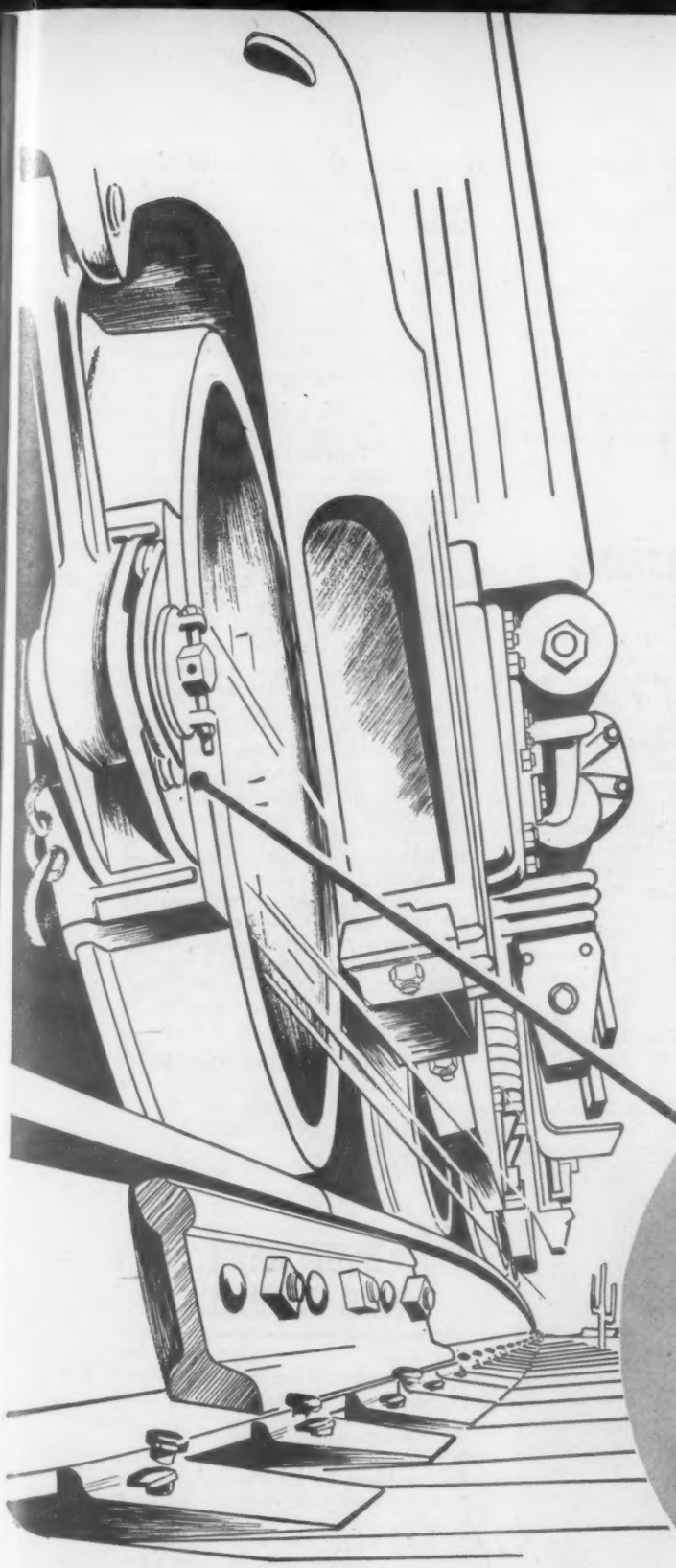

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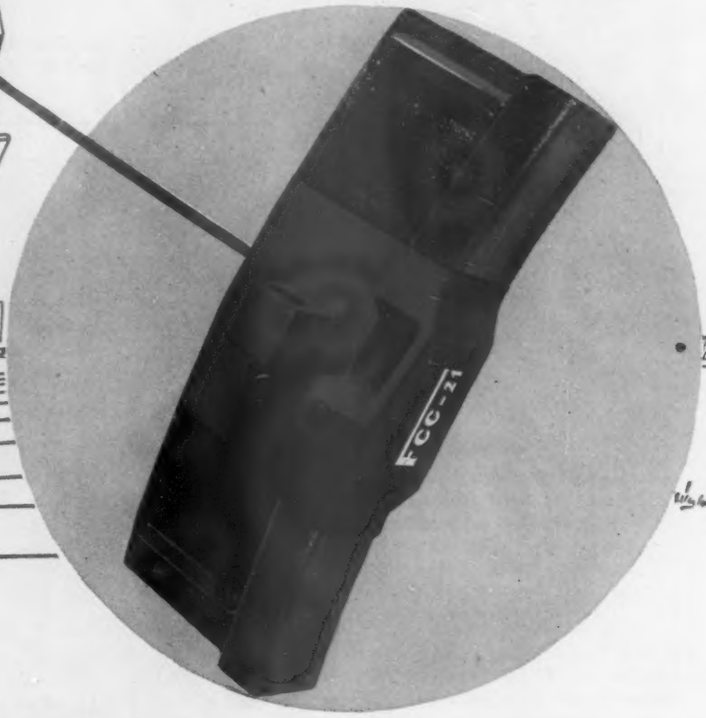
We are proud to announce the revolutionary FCC-21 Wheel Flange Combination Cutter to the Railroad Industry.

Practical tests have proven the FCC-21 Flange Cutter to be highly effective and economical in reducing flanges *while the Diesel is in service*. Unqualified endorsements of Superintendents and Master Mechanics alike, prompt us to offer this proven tool to the industry at this time. We believe that you can use this device to accurately turn down flanges without pulling a wheel.



Serving the Railroad Industry for Fifty Years

WHEEL TRUING BRAKE SHOE COMPANY

Dept. A-1 **628 West Baltimore Ave., Detroit 2, Michigan**

(Continued from page 104)
stampings was also examined. A flat spot, 7 in. long and about 1½ in. from the rim, "indicated that this wheel had slid after the left wheel failed," the report said. It added that there were also skid marks entirely around the rim and cuts in the tread, "apparently made by skidding on the rail."

When this mate wheel was placed in the wheel press "in the usual manner" for removing wheels from axles and a pressure of 85 tons exerted, "the wheel cracked entirely through the rim and its wheel seat and for about 22 in. around the plate." The report from the U.P. laboratory, which was quoted by the commission, said that five cracks were noted in the stencil marks of this wheel.

As to the wheel which broke, the U.P. report said its failure was "due primarily to excessive overheating which imposed severe internal stresses upon the rim in addition to service stresses, these concentrating in large, deep stencil marks which served as stress raisers, producing initial cracks from which fractures developed." In the "discussion" section of its report the commission made these observations:

"Many of the cracks shown were discovered after the wheel parts had been prepared for laboratory examination and might not be noticed at a usual shop or terminal inspection. It is significant that the cracks in the primary and secondary fractures exhibited structure characteristics of a typical progressive fatigue failure. It is also significant that all cracks found were radial and were located in radial branches of the stencil marks or in a radial direction in the curved parts of the marks.

"The stresses in power wheels of Diesel-electric locomotive units employed in high-speed heavy-duty service are not susceptible to easy analysis and accurate determination. These stresses result from a combination of (a) locked stresses resulting from heat treatment, (b) heavy loading, (c) tractive load, (d) vibratory stress, possibly of a harmonic character, (e) shock stresses resulting from track curvature and irregularity, (f) brake and thermal stresses, and (g) flywheel effect and possibly other factors not presently recognized."

Santa Fe Starts New L.C.L. Service by Truck

A new truck service for l.c.l. freight, designed to meet requirements of merchandise traffic within the state of California, has been announced by the Atchison, Topeka & Santa Fe. The new service operates generally between all points on Santa Fe rail lines (except in the mountain and desert areas east of Bakersfield and north of San Bernardino) under the billing and rates of the railroad through the trucking facilities of the Santa Fe Transportation Company, a subsidiary. Modern type highway equipment consisting of trucks, trailers, tractors and semi-trailers will be used. Store-door pickup and delivery service will be provided at all points in conjunction with the highway service, and such services as were offered by the highway subsidiary prior to the new l.c.l. service have been rearranged to provide complete truck service coordination.

Robert S. Hirsch, freight traffic manager for the railroad at Los Angeles, pointed out that the Santa Fe's mileage by rail between Los Angeles and San Francisco via Barstow is some 159 mi. farther than by highway through the San Joaquin valley. "Inauguration of the new service will give Santa Fe the opportunity to serve its patrons in the only practical method of providing the character of service required," he said.

ORGANIZATIONS

Ellen A. Watterson, of the Koppers Company gas and coke division, has been elected president of the **Women's Traffic Club of New York** to succeed Stella K. Schapiro, of the Joseph Rubin Sons Fruit & Produce Co., who will preside as chairman of the club's executive board. Other officers are: First vice-president, Mary E. Clarke, Philco International Corporation; second vice-president, Katherine Preyer, Liggett Drug Company; recording secretary, Alice M. Kenyon, Block International Corporation; corresponding secretary, Rae Greene, National Moving & Warehouse Corp.; and treasurer, Bessie W. Stanford, Gallia Laboratories.

Rowland E. Dobbins, traffic manager, Northrup, King & Co., has been elected president of the **Traffic Club of Minneapolis,** Minn., and J. G. Shonka, traffic manager, Minneapolis-Moline Company, vice-president.

Geraldine Kaye, director of the **Academy of Advanced Traffic,** has announced the school's removal to enlarged headquarters at 253 Broadway, New York, where it will occupy the entire eighth floor.

The executive committee of the board of directors of the **American Society of Traffic and Transportation** has been constituted as a general committee to arrange for and carry out the society's first traffic and transportation conference, to be held on the Chicago campus of Northwestern University December 7 and 8. Subcommittees to handle details will be appointed by Charles H. Vayo, of Rochester, N. Y., president of the society. The conference, to be held in connection with the society's annual meeting, will include panel discussions on liability of carriers, including claims and claims prevention, and on freight rate adjustments and carriers' revenues, with men prominent in transportation circles participating and serving as moderators. The tentative program also calls for addresses on and discussions of the society's aims and purposes; a luncheon and business meeting on December 7, and a dinner on December 8. The society will finance the conference, which will be open, at a nominal registration fee, to all persons interested in transportation, regardless of society membership.

The annual **Eastern Car Foremen's Association** outing and golf tournament will be held on July 13, at the Race Brook Country Club, Orange, Conn.

TO EMPHASIZE THE VERSATILITY of its "Pacemaker" freight service, the New York Central recently issued a two-color, 16-page folder, the cover of which, above, indicates the railroad's ability to handle all types of freight

EQUIPMENT AND SUPPLIES

Brazilian Road Gets Financing For Equipment Purchases in U.S.

Financing to the extent of $10,843,000 for equipment purchases in the United States by the Paulista Railway of Brazil was announced in Washington, D.C., on June 27 by the Export-Import Bank. "The financed amount," the announcement said, "includes a participation of $2,025,900 by the principal suppliers of the equipment."

The equipment orders involved have been placed as follows: 48 passenger cars, Pullman-Standard Car Export Corporation; 5 electric locomotives, International General Electric Company; 12 Diesel-electric locomotives, American Locomotive Export Corporation and I.G.E. Also involved are centralized traffic control equipment ordered from the Union Switch & Signal Co.,

and "electrification materials and shop equipment" ordered from "various other suppliers."

The credits will be paid in 10 semi-annual installments, beginning June 30, 1952. The bank's announcement included a statement from its chairman, Herbert E. Gasto, who said that some of the equipment will be used in extending the Paulista's electrification program, "which now embraces its principal trunk lines." The Diesel-electric locomotives will be installed as a first step in converting some of the road's other lines from steam operation.

Also, Mr. Gaston described the Paulista as "wholly privately owned and managed," and "unique among Latin-American railway enterprises in having an unbroken dividend record of 76 years." He added that it has no mortgage debt, its outstanding indebtedness being "limited to that incurred for equipment purchases."

N. & W. to Build 15 Steam Switchers and 1,000 Hoppers

The Norfolk & Western has authorized construction in its own shops of 15 coal-burning switching locomotives of the 0-8-0 type, class S-1, and an additional 1,000 70-ton hopper cars, at an estimated total cost of $6,425,000. Each of the new switchers will have a tractive effort of 62,900 lb., cast steel bed frames and oil lubrication of the driving journals. The tender will carry 15 tons of coal and 13,000 gal. of water. Bodies of the new hoppers will be built with copper-bearing steel plates of riveted and welded construction.

FREIGHT CARS

The **Boston & Maine** is inquiring for 750 50-ton box cars.

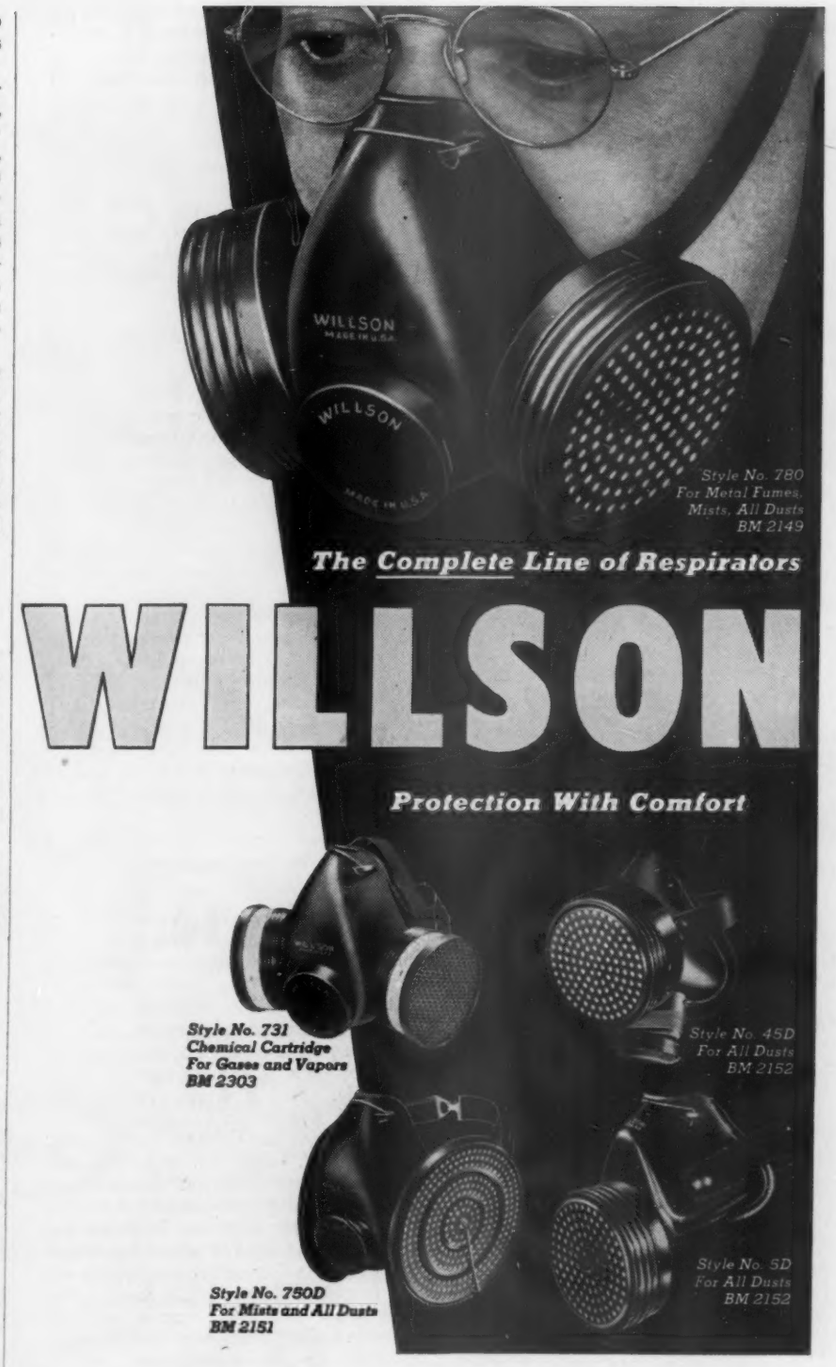
The **Chesapeake & Ohio** is inquiring for 1,000 50-ton box cars and 1,000 70-ton hopper cars.

The **Gulf, Mobile & Ohio** has ordered 200 50-ton 50½-ft. automobile box cars from the American Car & Foundry Co. at an estimated cost of $1,200,000. Delivery of these cars, inquiry for which was reported in *Railway Age* of May 27, page 50, is scheduled for the fourth quarter of 1950. The G.M. & O. also has ordered from the General Steel Castings Corporation 100 cast steel frames and ends which are being applied to trucks in the road's own shops to make 50-ton pulpwood cars.

PASSENGER CARS

C.&E.I. Buys Eight C.&O. Coaches

The Chicago & Eastern Illinois has reported purchase of eight lightweight, stainless steel coaches from surplus stock of the Chesapeake & Ohio. Each car contains a small lounge seating



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nine or ten passengers while the reclining seats in the body of the cars accommodate 56 or 58 passengers, depending on the individual car. The cars are being placed in service in various trains following inspection and touch-up work in the C.&E.I.'s Danville, Ill., shops.

LOCOMOTIVES

The **Royal State Railway** of Thailand has ordered 45 meter-gage Diesel-electric road locomotives from the Davenport Besler Corporation at a total cost of $4,500,000. Included in the order are 30 78-ton units, each equipped with two 500-hp. Caterpillar engines, and 15 53-ton units, each equipped with one 500-hp. Caterpillar engine. Deliveries are scheduled to begin next January and be completed by the following August.

SIGNALING

The **Southern** has ordered material from the General Railway Signal Company for a type K 2-wire, coded remote control interlocking at Danville, Ky. The control machine will have an 18-by 10-in. panel equipped with 9 track indication lamps and 8 levers for control of 3 switch machines, 1 switch lock, 1 spring switch and 13 signals. Model 5D switch machines, types B and K relays, models 10 and 9A electric switch locks, welded steel housings and type SC searchlight dwarf signals will be used.

The **Union Pacific** has placed orders with the Union Switch & Signal Company for the necessary material to install a remote control interlocking controlled from Tower A, Omaha, Neb. In addition to the 2½-ft. Style C control machine, which will be installed in Tower A, the orders include Style H-2 searchlight signals, M-22A switch machines, relays, rectifiers, transformers and switch circuit controllers. Field installation work will be handled by railroad forces.

IRON & STEEL

Price of Stainless Steel and Its Products Is Increased

Several subsidiaries of the United States Steel Corporation have announced price increases on stainless steel products effective June 28. Carnegie-Illinois Steel Corporation, a U. S. Steel subsidiary, has stated that prices on its stainless steel ingots, blooms, billets and slabs for re-rolling have been increased about one cent a pound. Prices of stainless steel tubular products of the National Tube Company, and cold rolled strip, cold drawn wire and bars of the American Steel & Wire Company—both subsidiaries of U. S. Steel—have been increased 1.5 cents a pound. The price increases are a result, the companies said, of the increase of eight cents a pound in the price of nickel and the generally increased costs of manufacturing which have occurred since the last increase in stainless steel prices in August, 1948. The price of Carnegie-Illinois steel plates—32 cents a pound—has not been affected.

Galvanized steel pipe in sizes one-half inch or larger has been increased in price about six dollars a ton. The National Tube Company said the increase stems from the increase in the cost of zinc, which has jumped from $195 per net ton to $300 since December 16, 1949.

MARINE

The **Chesapeake & Ohio** has ordered a 406-ft. steel car ferry from the Christy Corporation, Sturgeon Bay, Wis., at an approximate cost of $4,500,000. (The inquiry for this ferry was reported in *Railway Age* of March 25, page 76). Delivery of the ferry, which will have a capacity of 32 railroad freight cars as well as accommodations for passengers and automobiles, is scheduled for no later than October 1, 1951. The new ferry, for service on Lake Michigan between Luddington, Mich., and Wisconsin ports of Milwaukee, Manitowoc and Kewaunee, will have a beam of 59½ ft. and a draft of 18 ft. The cabin deck will have 60 passenger staterooms, a lounge, a dining room and an all-stainless-steel galley.

CAR SERVICE

The Car Service Division, A.A.R., issued an embargo, effective July 1, providing for movement of wheat in the Midwest only where storage space is available. The embargo covers the states of Kansas, Nebraska, Colorado and Missouri, and Council Bluffs, Iowa, and East St. Louis, Ill. It is designed to prevent congestion and undue delay of box cars at grain storage points and does not apply to wheat intended for sale. Also excepted is wheat for which the bill of lading or reconsignment order is endorsed specifically naming the firm with which the grain will be stored under definite prior arrangements.

Special car order No. 59, effective July 5, was issued by the Car Service Division, A. A. R., to expedite the return home of Canadian box cars to handle the grain movement there. The order requires that any loading of the Canadian cars must be as follows: by railroads in the Eastern, Allegheny, and Pocahontas regions—"only to or via Canadian roads or to junctions with the owners"; by Southern-region roads—"only to destinations north of the Potomac and Ohio rivers"; by Northwestern-region roads—"only to or via the owners or to junctions with the owners"; by roads in the Central Western and Southwestern regions—"only to destinations north of a line extending from St. Louis through Kansas City to Denver or to stations east of the Mississippi river, when such loading is in accordance with Car Service Rules." In the absence of loading specified above, the Canadian cars "shall be moved to the owners empty in service or short route," the order also provides.

SUPPLY TRADE

It's Now Ribbonrail

A new name—Ribbonrail—has been coined by the Oxweld Railroad Service Company to designate rail that has been welded into continuous lengths by the oxyacetylene pressure-welding process. The company expects that Ribbonrail will become widely known to the public as well as railroaders as the identifying term for welded rail produced by its process. It is anticipated that well over 100 mi. of track will be laid with Ribbonrail in 1950, and that about 70 per cent of this will be placed in connection with standard programs of rail renewal in open track.

H. B. Oatley, Doctor of Engineering

Henry B. Oatley, retired vice-president of the Superheater Company, division of Combustion Engineering-Superheater, Inc., was awarded the honorary degree of Doctor of Engineering at the 1950 commencement exercises of the University of Vermont on June 12. Mr. Oatley is still a consultant on the engineering staff of the Superheater Company.

John F. Myers has been elected president of the **Westinghouse Electric Supply Company,** New York, N. Y., to succeed **David M. Salsbury,** who will become vice-president in charge of Texas and Pacific coast operations of the company, with headquarters at San Francisco, Cal. Mr. Myers was formerly manager of the company's new consumer product factory branches in the Middle Atlantic district.

W. J. Goerisch, formerly manag r of lamp sales, has been appointed manager, power apparatus sales, for the **Graybar Electric Company.** He will be responsible for national sales of General Electric power apparatus equipment including motors, controls, generators and transformers as well as ventilating equipment and welding apparatus which Graybar distributes. **B. P. Van Inwegan,** formerly manager, supply specialty sales, will succeed Mr. Goerisch.

J. R. Carlson has joined the sales staff of the **Cuno Engineering Corporation,** at Meriden, Conn. Mr. Carlson was associated with the Diesel

division of the Worthington Pump & Machinery Corp. for 12 years and, in his new association, will assist Cuno Engineering representatives in serving the Diesel manufacturer and user.

Fred A. Kaufman has been appointed general sales manager of the **McKay Company,** succeeding **Fred C. Smith,** who has been appointed special assistant to the president, **J. C. McKay.** Mr. Kaufman, manager of the company's arc welding electrode division at Pittsburgh, Pa., for the last year and a half, will continue to have charge of the sales of arc welding electrodes, as well as the complete line of McKay chain and chemical products.

Horace Zimmer, New York district manager of the apparatus department of the **General Electric Company,** has been appointed manager of districts for the department, with headquarters at Schenectady, N. Y. He will be succeeded by **Frank A. Faron,** formerly New York district's industrial divisions manager. **A. K. Bushman,** formerly manager of the application and service engineering divisions of the apparatus department, has been appointed manager of industry divisions in the sales organization of the department, also at Schenectady. **Francis E. Fairman,** formerly manager of sales for the department's transformer and allied product divisions at Pittsfield, Mass., has been appointed general sales manager of large apparatus divisions, at Schenectady, and **Arthur W. Bartling,** formerly manager of sales for the department's fractional-horsepower motor divisions in Fort Wayne, Ind., has been appointed general sales manager of small apparatus divisions in the department, with headquarters at Lynn, Mass. Both of the latter positions are newly established.

Charles T. Button has been appointed director of sales for **Holtzer-Cabot,** division of the **National Pneumatic Company.** Formerly with Holtzer-Cabot for 18 years as assistant sales manager of the electric motor division, Mr. Button comes to his new assignment from the Howell Electric Motors Company, Howell, Mich., where he was vice-president in charge of sales.

The **Robert N. Campbell Company,** 1330 North Industrial boulevard, Dallas, Texas, will represent the **National Pneumatic Company** in Texas, Louisiana, Arkansas, Oklahoma and Mississippi. **H. D. Mallison,** formerly a member of the sales staff of National Pneumatic, has joined the Campbell Company in Dallas, as sales manager.

William E. Olds has been appointed assistant vice-president—sales of the **Standard Railway Equipment Manufacturing Company,** with headquarters in the company's Chicago offices. Mr. Olds has for many years been engaged in the railway equipment business, having been asso-

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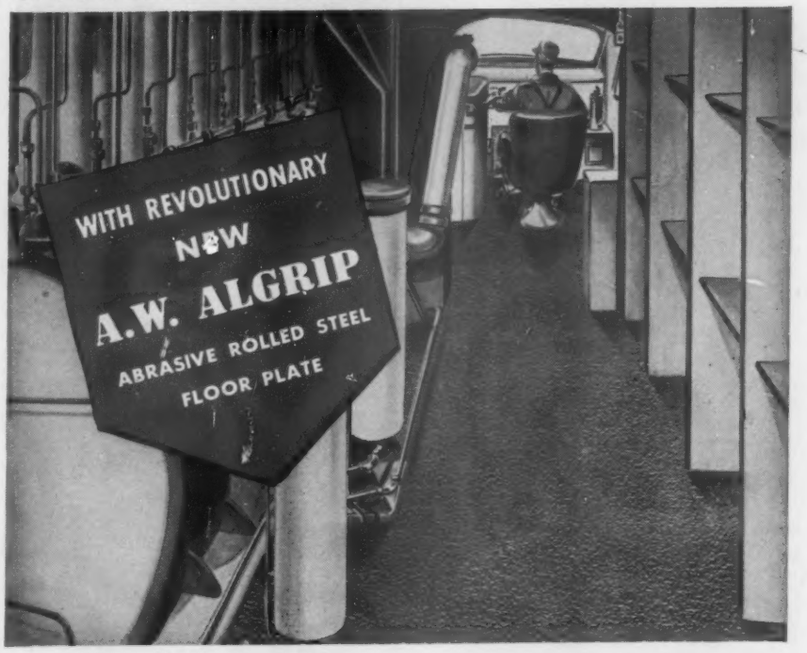

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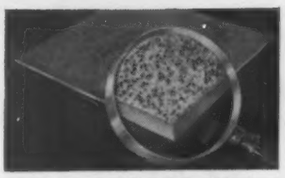

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ciated with Pettibone Mulliken Corporation, Gustin-Bacon Manufacturing Company and the American Car & Foundry Co.

The **Hyster Company** has appointed **J. P. Waite, Inc.,** 3304 West Pierce street, Milwaukee 4, Wis., as the new dealer for Hyster industrial materials handling trucks in eastern Wisconsin and northern Michigan.

OBITUARY

Ward W. Willits, retired president of the Adams & Westlake Co., died on June 27, in Chicago. He was 91 years old.

FINANCIAL

Southern. — *St. Louis-Louisville Bonds.*—Division 4 of the I.C.C. has dismissed "without prejudice" an application filed recently by this road for authority to issue $10,000,000 of St. Louis-Louisville first mortgage bonds, The dismissal was sought by the Southern in a motion filed after no bids had been received for the proposed issue within the time limit set by the bid invitations. (See *Railway Age* of June 24, page 112.)

New Securities

Application has been filed with the I.C.C. by:

ERIE.—To assume liability for $8,100,000 of equipment trust certificates to finance in part acquisition of 64 Diesel-electric locomotives (as listed below) at an estimated total cost of $10,244,000.

	Description and builder	Estimated Unit Cost
2	6,400-hp. freight locomotives of four units each (American Locomotive Company)	$630,000
8	1,600-hp. road switchers (American)	139,000
4	1,600-hp. road switchers (American)	145,000
2	1,600-hp. road switchers (American)	156,000
9	1,500-hp. road switchers (Baldwin Locomotive Works)	182,000
22	1,500-hp. road switchers (Electro-Motive Division, General Motors Corporation)	152,500
4	1,500-hp. road switchers (Electro-Motive)	154,000
2	1,500-hp. road switchers (Electro-Motive)	143,500
5	1,200-hp. switchers (Electro-Motive)	98,000
4	1,200-hp. switchers (Lima-Hamilton Corporation)	99,000

The certificates, dated July 15, would mature in 30 semi-annual installments of $270,000 each, beginning January 15, 1951. They would be sold on the basis of competitive bids, with the interest rate set by such bids.

NEW YORK, NEW HAVEN & HARTFORD. — To assume liability for $3,000,000 of equipment trust certificates to finance in part the acquisition of 40 Diesel-electric locomotives (as listed below) at an estimated total cost of about $5,555,555.

	Description and builder	Estimated Unit Cost
20	1,600-hp. road switchers (American Locomotive Company	$150,500
10	1,600-hp. road switchers (Fairbanks, Morse & Co.)	151,400
10	1,200-hp. switchers (Lima-Hamilton Corporation)	99,800

The certificates, dated August 1, would mature in 15 annual installments of $200,000 each, beginning August 1, 1951. They would be sold on the basis of competitive bids with the interest rate set by such bids.

Dividends Declared

Atchison, Topeka & Santa Fe.—$1.50, quarterly, payable September 1 to holders of record July 28.

Illinois Terminal.—20¢, quarterly, payable August 1 to holders of record July 10.

Piedmont & Northern.—75¢, quarterly, payable July 20 to holders of record July 5.

Reading.—50¢, quarterly, payable August 10 to holders of record July 13.

Western Pacific.—75¢, quarterly, payable August 15 to holders of record August 1.

Average Prices Stocks & Bonds

	July 3	Last week	Last year
Average price of 20 representative railway stocks	39.12	39.93	36.43
Average price of 20 representative railway bonds	89.07	90.15	82.81

RAILWAY OFFICERS

EXECUTIVE

Guy F. Stephens, whose election as vice-president in charge of personnel of the Chicago & North Western system was reported in the *Railway Age* of June 4, has been director of personnel for the C. & N. W. since 1940

The St. Louis-San Francisco has announced the revamping and expanding of its development department. Appointed to head the reorganized department is **J. E. Gilliland,** who becomes assistant to the president in charge of development, with headquarters at St. Louis, Mo. Mr. Gilliland was heretofore executive general agent of the Frisco and vice-president of the Frisco Transportation Company (truck subsidiary of the road), with headquarters at Springfield, Mo.

David M. Petty has been elected president and **Paul A. Trageser,** first vice-president, of the Cambria & Indiana.

Charles E. Gay, III, has been elected president of the Savannah & Atlanta to succeed **Charles E. Gay, Jr.,** retired.

Carl L. Jellinghaus has been appointed resident vice-president—assistant to president, New York Central, with headquarters at Detroit, Mich. Mr. Jellinghaus, who for the last year has been vice-president-executive department, New York, was the road's vice-president at Detroit from September 1, 1944, until his transfer to New York on July 1, 1949.

John C. O'Neill, whose promotion to executive vice-president of the Alabama, Tennessee & Northern (part of the St. Louis-San Francisco), with headquarters at Mobile, Ala., was reported in the *Railway Age* of June 10, was born at Cincinnati, Ohio, on August 19, 1900, and entered railroad service in 1922 with the Louisiana & Arkansas and the Mississippi Central joint agency at New Orleans, La. During 1925 and 1926 he served as general agent of the same lines at Pittsburgh, Pa., when he was transferred to Chicago, where he served until 1927. In 1928 he was appointed general agent of the A.T.&N. at Mobile, and in 1929 became division freight agent. Mr. O'Neill was advanced to general freight agent in

John C. O'Neill

1937, and in November, 1944, was promoted to traffic manager at Mobile, becoming general manager there in June, 1947. He was further advanced to vice-president—traffic in 1949, the position he held prior to his recent promotion.

FINANCIAL, LEGAL & ACCOUNTING

Arnold E. Yelland, purchasing agent and chief clerk to vice-president and general manager of the Lake Superior & Ishpeming, who has been elected also secretary as reported in *Railway Age* of June 24, was born on July 8, 1903, at Negaunee, Mich., where he was graduated from high school in 1921. In 1929 he completed a correspondence course in higher accountancy with LaSalle Extension University. Mr. Yelland entered service of the L. S. & I. in November, 1923, and until 1938 held the position of stenographer-clerk. Subsequently he was advanced to chief clerk to vice-president and general manager, and in January, 1948, was appointed also purchasing

agent, in which capacity he was serving when he assumed his additional duties as secretary.

O. S. Deahl and **L. L. Lechner** have been appointed assistant treasurers, and **Lloyd A. Montgomery,** paymaster, of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio. The appointments fill vacancies created by the retirements of **John A. Parnin,** assistant treasurer of the road since 1941, and **Henry H. Zerbst,** paymaster for nearly 35 years.

George E. Sellers has been elected secretary and treasurer, and **C. J. Fatzinger,** auditor, of the Cambria & Indiana.

Richard B. Gwathmey and **M. V. Barnhill, Jr.,** have been appointed general solicitors for the Atlantic Coast Line at Wilmington, N. C.

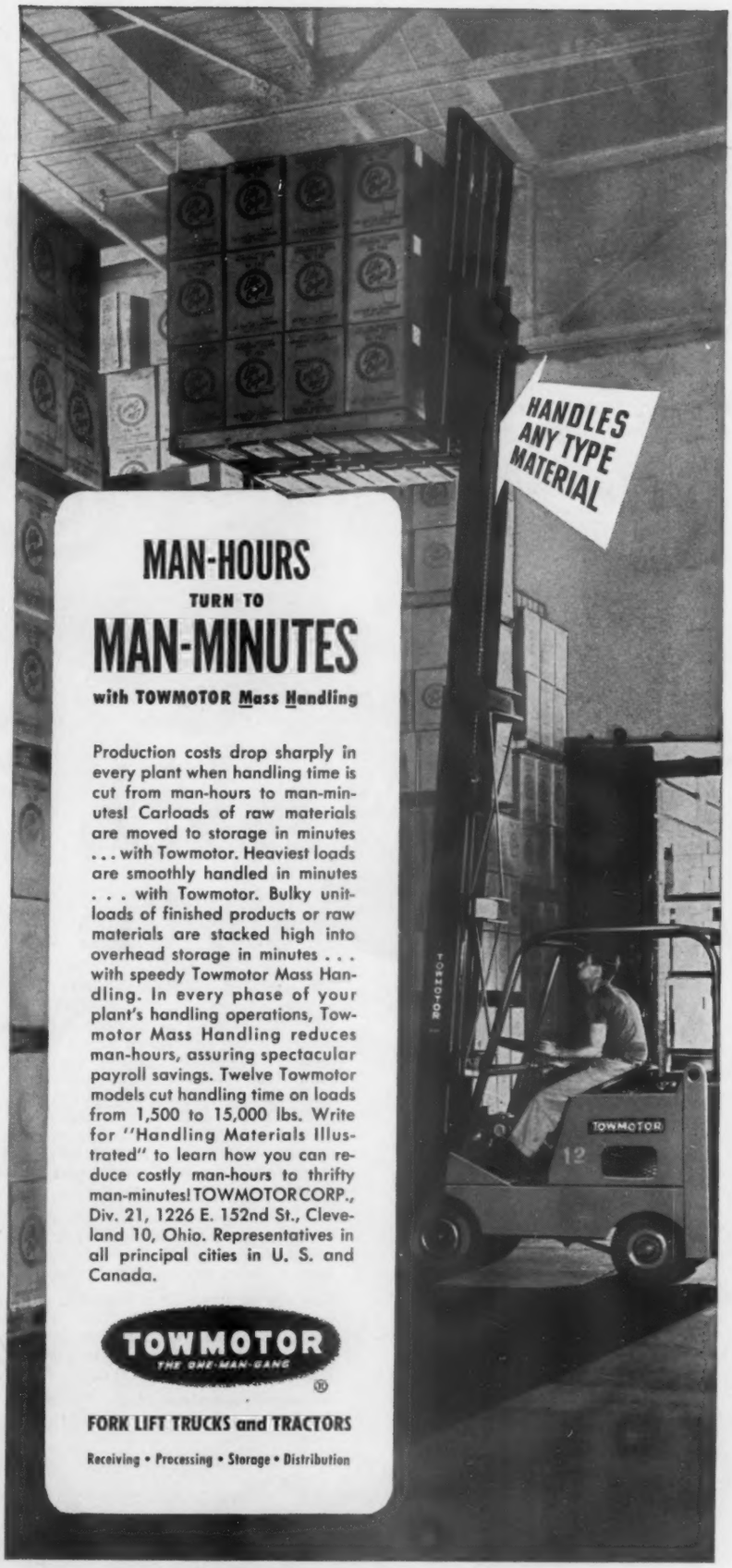
OPERATING

A. M. Ball, superintendent northern division of the St. Louis-San Francisco, with headquarters at Fort Scott, Kan., has been transferred in that capacity to the southern division, with headquarters at Memphis, Tenn., to succeed **H. H. De Berry,** appointed assistant general superintendent transportation at Springfield, Mo. **P. J. Schmitz,** superintendent central division, with headquarters at Fort Smith, Ark., succeeds Mr. Ball, and is in turn succeeded by **L. W. Menk,** terminal trainmaster at Memphis, Tenn. **R. L. Edmonson** replaces Mr. Menk.

C. V. Berglund, general manager, eastern district, of the Northern Pacific, with headquarters at St. Paul, Minn., has retired after 41 years of service with that road. Promoted to

C. V. Berglund

succeed Mr. Berglund is **C. H. Burgess,** assistant general manager, with headquarters at Seattle, Wash. **J. T. Stotler,** superintendent of the Fargo division, succeeds Mr. Burgess, and is in turn succeeded by **F. W. McCabe,** assistant superintendent, Tacoma division. Succeeding Mr. McCabe is **Ira Brewer,** trainmaster, Yellowstone di-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vision, with headquarters at Billings, Mont. **L. H. Dahl,** roadmaster at Laurel, Mont., succeeds Mr. Brewer. Mr. Berglund was born on April 4, 1889, at Minneapolis, Minn., and entered railroad service there with the N. P. in 1909 as a stenographer in the superintendent's office. He was subsequently employed in statistical and clerical work in the road's St. Paul general office, and in 1927 was appointed trainmaster at Livingston, Mont. He held this position also at Staples, Minn., and Dickinson, N. D., remaining at the latter point until 1936, when he was advanced to assistant to the general manager at Seattle. He returned to St. Paul in February, 1940, as assistant to the operating vice-president, and in October of that year was promoted to assistant general superintendent of transportation. In October, 1944, he became general superintendent of transportation, being further promoted to general manager in April, 1947.

Born on February 17, 1894, at Worcester, Mass., Mr. Burgess was graduated from Worcester Polytechnic Institute in 1916 with a degree in civil engineering. He began his railroad career in June, 1916, with the N. P., holding various positions in the track and engineering departments until 1923, when he became assistant roadmaster at Livingston, Mont. From 1925 until 1936 he served successively as roadmaster at Fargo, N. D., and Glendive, Mont., and as division roadmaster at Jamestown, N. D., and Missoula, Mont. In 1936 he was appointed trainmaster at Missoula, which position he held later at Pasco, Wash., Auburn and Tacoma. He was advanced to assistant

C. H. Burgess

superintendent at Tacoma in 1939, and was promoted to superintendent there in 1942. In January, 1947, Mr. Burgess became assistant general manager.

Mr. Stotler was born in Tacoma, Wash., on May 27, 1905, and received his higher education at Washington State College, at Pullman, Wash., having been awarded a degree in mechanical engineering in 1928. Shortly there-

J. T. Stotler

after, Mr. Stotler joined the N. P..'s engineering department at Seattle, remaining with that department until 1933, when he became assistant supervisor of maintenance of the Camas Prairie (controlled jointly by the N. P. and the Union Pacific). Between 1935 and 1943, Mr. Stotler held positions on the N. P. as, successively, roadmaster at Helena, Mont., and Lester, Wash., division roadmaster, Spokane; roadmaster-trainmaster, East Grand Forks, Minn., and trainmaster, Yellowstone division, Dickinson, N. D. He became superintendent of ore operations at

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Delivered complete ready for service connections

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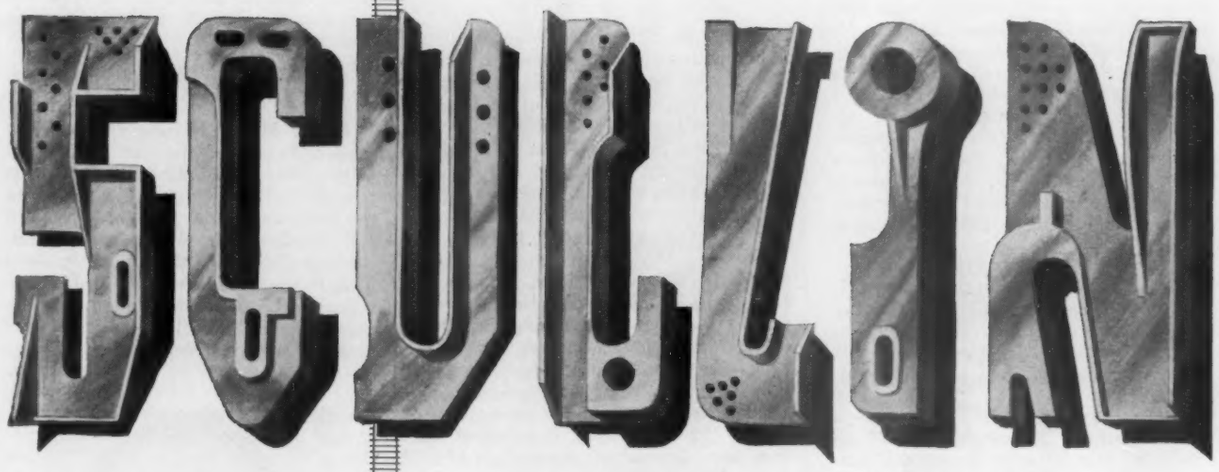

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Superior, Wis., in 1943, and assistant superintendent at Fargo, N. D., in 1946, being promoted to superintendent of the Fargo division in 1948.

J. G. Sheppard, assistant trainmaster, Gurdon subdivision, of the Missouri Pacific, with headquarters at El Dorado, Ark., has been promoted to trainmaster, east and west, Benton and Mt. Vernon subdivisions, with headquarters at Bush, Ill., succeeding **L. E. Smith,** assigned to other duties.

Lonnie I. McNutt, superintendent at Macon, Ga., for the Southern, has been appointed superintendent at Alexandria, Va., to succeed **J. Floyd Beaver,** who has been promoted to chief engineer, maintenance of way and structures, at Charlotte, N. C. **John P. Mumford,** assistant superintendent at Knoxville, Tenn., succeeds Mr. McNutt at Macon. Mr. Mumford, in turn, is succeeded by **Paul C. Shu,** former trainmaster at Greensboro, N. C.

K. G. Roeder, mechanical engineer and Diesel supervisor of the Lehigh & New England, has been appointed assistant to the superintendent, with headquarters at Pen Argyl, Pa.

Samuel E. Miller has retired as assistant general manager of the Boston & Maine and Maine Central at Boston, Mass., after 51 years of service, but will continue to serve as a special assistant, with duties as assigned. Mr. Miller started with the B. & M. as a telegraph operator and ticket seller on March 4, 1899, and served successively as ticket agent and operator in the dispatcher's office, inspector of transportation and acting superintendent of transportation. In December, 1922, he was appointed superintendent of the Southern division at Concord, N. H., and in September, 1925, became general superintendent of transportation. In January, 1928, he was named assistant general manager of the B. & M. and in 1933 was appointed to a similar position on the M.C.

TRAFFIC

Coincident with reorganization of its development department, the St. Louis-San Francisco has announced the appointment of **J. W. Mahanay,** assistant to the traffic vice-president, as director of development. **M. L. Austin,** director of industrial development, has been appointed general industrial agent, and **C. B. Michelson,** director of agricultural development, has been made general agricultural agent. All continue to be headquartered at St. Louis.

Fred W. Konze, district freight agent of the Pennsylvania at Peoria, Ill., has been transferred in that capacity to Dallas, Tex., succeeding **Thomas Waters,** who has retired from active duty. **Ned W. Culmer,** of the Pennsylvania's freight traffic headquarters at Chicago, has been promoted to succeed Mr. Konze.

Herman C. Forgy, manager of mail, baggage and express traffic of the Union Pacific, with headquarters at Omaha, Neb., has retired from that post after 47 years of mail transportation service. Mr. Forgy will continue with the road in a consulting capacity. He is succeeded by **Frank W. Hickson,** superintendent of district No. 1 of the Postal Transportation Service.

Hugh R. Smith, assistant freight traffic manager of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has retired because of ill health after more than 41 years' service. Succeeding Mr. Smith is **Henry J. Carr,** general freight agent at St. Louis. **R. R. Chavis,** assistant general freight agent at that point, succeeds Mr. Carr, and is in turn replaced by **W. J. Weaver.** Mr. Smith was born on March 1, 1889, at Sandoval, Ill., where he attended high school. He later attended business college and in 1906 entered railroad service as a stenographer in the accounting department of the Missouri Pacific at St. Louis. In 1908 he went to the Katy as a stenographer in the traffic department at that point, becoming rate clerk in 1919. From 1922 to 1924 he served as chief clerk to assistant general freight agent, and subsequently became chief clerk in the general freight office. Mr. Smith was advanced to assistant general freight agent in 1927, and in June, 1945, became assistant freight traffic manager.

Born in Belleville, Ill., on July 17, 1900, Mr. Carr attended St. Louis University and City College, receiving his L.L. B. degree from the latter in 1935. He started his railroad career in April, 1917, as an office boy with the Mobile & Ohio (now Gulf, Mobile & Ohio) at St. Louis. Except for the period between June, 1918, and February, 1919, when he served in the U. S. Army, Mr. Carr continued with the G. M. & O. in various clerical capacities. In 1936 he was appointed assistant general freight agent, remaining in that post until September, 1942, when he went into the U. S. Army Transportation Corps, holding the rank of captain and later major. In January, 1946, he joined the Katy as assistant general freight agent, becoming general freight agent in April, 1948.

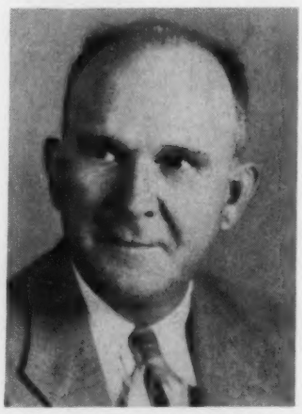
William G. Presley, district passenger agent of the Pennsylvania at Dayton, Ohio, has been promoted to division passenger agent at St. Louis, Mo., to suceed **Frank J. Roth,** who has been advanced to division passenger agent at Chicago. **Arthur C. Striebel,** who has been district passenger agent at Chicago, succeeds Mr. Presley, and is succeeded at Chicago by **Henry W. Ring,** former passenger representative at Pittsburgh, Pa. Mr. Roth succeeds **I. W. Adelhelm,** who has been transferred.

Russell S. Tassi has been appointed commercial agent for the Erie, with headquarters at St. Louis, Mo.

The New York Central has announced the appointment of **Edward R. Brunck** as freight traffic manager at Detroit, Mich., to replace Oswald R. Bromley, who is retiring, because of his health, after 45 years with the road. **J. L. Meehan,** assistant freight traffic manager at St. Louis, Mo., will transfer to Detroit as Mr. Brunck's assistant.

MECHANICAL

H. A. Mason, whose promotion to superintendent of the car department of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of June 17, was born on October 24, 1901, at Hughes Springs, Tex. Mr. Mason first entered T. & P. service in September, 1925, as a car clerk on the old Denton division. Subsequently he held the positions successively of timekeeper, car checker



H. A. Mason

on the old Rio Grande division and at the Marshall (Tex.) shop, lead carman at Texarkana, Ark., rip track foreman and wrecker foreman at the Marshall shop and rip track foreman at Texarkana. In January, 1942, he was transferred to Marshall as freight car shop foreman, being advanced to general car foreman at Dallas in May, 1946. He held the latter post at the time of his recent promotion.

L. W. Van Nattan, superintendent of Diesel equipment of the Kansas City Southern Lines, with headquarters at Pittsburg, Kan., has been promoted to superintendent of machinery, with the same headquarters. He succeeds **J. M. Pierce,** who has retired after 42 years of service. **W. B. Johnson,** assistant to superintendent of machinery, with headquarters at Pittsburgh, has been appointed assistant superintendent of machinery, with the same headquarters,

having jurisdiction over the car department. The positions formerly held by Messrs. Van Nattan and Johnson have been abolished.

W. V. Dew and **F. Holland** have been appointed general foremen of the Atlantic Coast Line, with headquarters at, respectively, Thomasville, Ga., and the Jacksonville, Fla., shops. **D. B. Lacy** and **W. C. Stancil** have been appointed master mechanics with headquarters at, respectively, Jacksonville and Rocky Mount, N. C.

PURCHASES & STORES

F. M. Pittenger has been appointed purchasing agent of the Cambria & Indiana.

ENGINEERING & SIGNALING

H. W. Dunn, supervisor signal & electrical equipment of the Belt of Chicago, with headquarters at Chicago, has been appointed signal and electrical engineer of that road and the Chicago & Western Indiana, with headquarters as before at Chicago.

N. M. Kelly and **N. B. Roberts** have been appointed assistant engineers in the office of engineer, maintenance of way, Eastern region, Canadian Pacific, with headquarters at Toronto, Ont.

J. Floyd Beaver has been appointed chief engineer, maintenance of way and structures, Eastern lines, of the Southern, to succeed **Edgar Bennett.** Mr. Beaver's headquarters will be at Charlotte, N. C.

SPECIAL

E. H. Wilson has been appointed chief special agent of the Alabama, Tennessee & Northern (part of the St. Louis-San Francisco), with headquarters at St. Louis, Mo.

Richard E. White, director of research for the Hudson & Manhattan, has been appointed superintendent of buildings to succeed **William A. Davis,** recently appointed superintendent of transportation.

R. B. Dulaney has been appointed staff assistant of the Atlantic Coast Line with headquarters at Wilmington, N. C.

G. S. Rains and **W. D. Cook,** members of the standing rate committee of the Southern Freight Association, have retired from the association. **Earl P. Crow** and **John H. McMahan** have been elected members of the committee.

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OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 128 monthly reports of revenues and expenses representing 132 Class I steam railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF APRIL 1950 AND 1949

Item	United States		Eastern District		Southern District		Western District	
	1950	1949	1950	1949	1950	1949	1950	1949
Miles of road operated at close of year	226,498	226,671	53,354	53,481	46,139	46,050	127,005	127,140
Revenues:								
Freight	$601,800,806	$620,312,407	$234,242,920	$241,065,118	$131,120,335	$133,094,890	$236,437,551	$246,152,399
Passenger	60,554,775	68,659,374	33,084,702	36,208,076	9,805,644	11,705,543	17,664,429	20,745,755
Mail	18,733,428	18,896,901	6,811,630	7,111,774	3,340,119	3,419,410	8,581,679	8,365,717
Express	5,143,591	6,968,293	1,337,954	2,015,129	1,068,697	1,356,475	2,736,940	3,596,689
All other operating revenues	27,587,497	32,443,389	12,561,978	14,795,653	5,151,197	5,524,758	9,874,322	12,122,978
Railway operating revenues	713,820,097	747,280,364	288,039,184	301,195,750	150,485,992	155,101,076	275,294,921	290,983,538
Expenses:								
Maintenance of way and structures	103,557,613	113,267,851	35,694,277	40,982,698	21,656,140	23,218,827	46,207,196	49,066,326
Depreciation	10,828,029	10,613,357	4,506,194	4,458,867	1,978,682	1,851,372	4,343,153	4,303,118
Retirements	989,748	955,736	443,308	427,099	185,424	232,849	361,016	295,788
Deferred maintenance	*341,456	*300,586	*270,576	*113,410	*14,102	*54,552	*56,778	*132,624
Amortization of defense projects	145,061	152,603	15,943	16,835	46,388	46,478	82,730	89,290
Equalization	*1,296,714	*4,452,033	*740,483	*2,010,123	265,168	*391,023	*821,399	*2,050,887
All other	93,232,945	106,298,774	31,739,891	38,203,430	19,194,580	21,533,703	42,298,474	46,561,641
Maintenance of equipment	135,928,547	142,019,629	57,818,735	58,785,069	26,667,238	28,719,766	51,442,574	54,514,794
Depreciation	24,205,483	22,524,671	8,805,628	8,626,620	5,508,934	5,165,513	9,890,921	8,732,538
Retirements	*24,821	*76,507	*5,185	*17,387	5,657	*8,644	*25,293	*50,476
Deferred maintenance and major repairs	*777,654	*131,624	*744,053	*55,414	*4,589	*49,882	*29,012	*26,328
Amortization of defense projects	1,221,903	1,222,008	451,497	450,967	238,478	238,877	531,928	532,164
Equalization	512,047	68,784	31,984	*21,488	137,039	117,891	343,024	*27,619
All other	110,791,589	118,412,297	49,278,864	49,801,771	20,781,719	23,256,011	40,731,006	45,354,515
Traffic	15,809,390	16,630,053	5,116,172	5,597,932	3,373,699	3,392,601	7,319,519	7,639,520
Transportation—Rail line	276,402,117	289,295,357	119,500,693	123,909,215	52,517,372	55,102,785	104,384,052	110,283,357
Miscellaneous operations	8,454,580	9,628,382	3,136,516	3,658,650	1,411,615	1,564,768	3,906,449	4,404,964
General	22,472,989	23,444,395	8,895,993	9,089,752	4,658,870	5,007,859	8,918,126	9,346,784
Railway operating expenses	562,625,236	594,285,667	230,162,386	242,023,316	110,284,934	117,006,606	222,177,916	235,255,745
Net revenue from railway operations	151,194,861	152,994,697	57,876,798	59,172,434	40,201,058	38,094,470	53,117,005	55,727,793
Railway tax accruals	74,145,684	75,097,445	26,038,667	28,332,870	20,059,339	18,643,033	28,047,678	28,121,542
Pay-roll taxes	20,720,498	21,891,828	8,589,462	9,028,144	4,001,869	4,233,722	8,129,167	8,629,962
Federal income taxes†	26,546,567	26,001,351	7,909,832	9,257,067	10,057,126	8,686,019	8,579,609	8,058,265
All other taxes	26,878,619	27,204,266	9,539,373	10,047,659	6,000,344	5,723,292	11,338,902	11,433,315
Railway operating income	77,049,177	77,897,252	31,838,131	30,839,564	20,141,719	19,451,437	25,069,327	[27,606,251
Equipment rents—Dr. balance	11,644,149	10,085,848	5,579,900	5,040,303	*722,536	79,216	6,786,785	4,966,329
Joint facility rent—Dr. balance	3,188,151	3,349,304	1,471,704	1,615,725	500,373	548,254	1,216,074	1,185,325
Net railway operating income	62,216,877	64,462,100	24,786,527	24,183,536	20,363,882	18,823,967	17,066,468	21,454,597
Ratio of expenses to revenues (percent)	78.8	79.5	79.9	80.4	73.3	75.4	80.7	80.8

FOR THE FOUR MONTHS ENDED WITH APRIL 1950 AND 1949

Item	United States		Eastern District		Southern District		Western District	
	1950	1949	1950	1949	1950	1949	1950	1949
Miles of road operated at close of month:	226,60	226,675	53,371	53,482	46,147	46,042	127,086	127,151
Revenues:								
Freight	$2,251,646,667	$2,390,376,169	$849,528,210	$929,195,716	$481,875,306	$507,706,825	$920,243,151	$953,473,628
Passenger	247,680,680	285,163,790	132,950,153	148,831,081	42,046,314	50,115,055	72,684,213	86,217,654
Mail	71,469,412	71,441,146	26,302,505	26,262,589	12,490,596	13,093,763	32,676,311	32,084,794
Express	19,876,272	22,444,565	5,590,859	6,161,950	4,515,399	4,741,126	9,770,014	11,541,489
All other operating revenues	108,445,434	123,409,875	48,519,767	55,168,064	19,166,434	21,434,657	40,759,233	46,807,154
Railway operating revenues	2,699,118,465	2,892,835,545	1,062,891,494	1,165,619,400	560,094,049	597,091,426	1,076,132,922	1,130,124,719
Expenses:								
Maintenance of way and structures	378,505,883	417,374,799	130,090,849	149,314,501	84,779,950	88,390,712	163,635,084	179,669,586
Depreciation	43,118,871	42,263,897	18,015,278	17,783,494	7,745,249	7,408,433	17,358,344	17,071,970
Retirements	3,025,145	3,387,443	850,772	1,006,258	735,210	471,515	1,439,163	1,909,670
Deferred maintenance	*994,293	*876,440	*800,000	*253,241	*32,815	*185,829	*161,478	*437,370
Amortization of defense projects	606,427	592,518	73,812	60,881	185,483	191,095	347,132	340,542
Equalization	15,672,452	10,258,887	8,038,119	5,362,572	5,724,698	3,391,883	1,909,635	1,504,432
All other	317,077,281	361,748,494	103,912,868	125,354,537	70,422,125	77,113,615	142,742,288	159,280,342
Maintenance of equipment	527,351,626	558,134,203	217,099,254	228,972,604	103,383,453	112,116,923	206,868,919	217,044,676
Depreciation	96,467,930	89,422,642	35,597,237	34,405,770	21,735,333	20,099,643	39,135,360	34,917,229
Retirements	*168,086	*261,540	*21,702	*50,487	*77,207	*40,296	*69,177	*170,757
Deferred maintenance and major repairs	*8,542,180	*581,748	*8,309,210	*294,130	*21,453	*181,084	*211,517	*106,534
Amortization of defense projects	4,889,647	4,888,362	1,806,056	1,803,924	954,011	955,545	2,129,580	2,128,893
Equalization	115,019	902,874	115,372	25,070	1,060,825	789,446	*1,061,178	88,358
All other	434,589,296	463,763,613	187,911,501	193,082,457	79,731,944	90,493,669	166,945,851	180,187,487
Traffic	63,212,439	65,669,706	21,358,994	22,389,162	13,289,358	13,936,193	28,564,087	29,344,351
Transportation—Rail line	1,091,747,769	1,190,281,344	466,392,490	503,752,278	203,042,814	222,091,745	422,312,465	464,437,321
Miscellaneous operations	34,954,288	41,047,902	13,096,899	15,533,888	5,720,421	6,658,433	16,136,968	18,855,581
General	89,039,984	93,805,867	34,456,975	36,451,787	18,931,629	19,980,412	35,651,380	37,373,668
Railway operating expenses	2,184,811,989	2,366,313,821	882,495,461	956,414,220	429,147,625	463,174,418	873,168,903	946,725,183
Net revenue from railway operations	514,306,476	526,521,724	180,396,033	209,205,180	130,946,424	133,917,008	202,964,019	183,399,536
Railway tax accruals	272,755,069	277,445,956	92,640,228	103,702,460	66,249,379	67,432,254	113,865,462	106,311,242
Pay-roll taxes	81,320,041	85,587,226	33,205,017	35,203,402	15,544,585	16,671,010	32,570,439	33,712,814
Federal income taxes†	84,010,636	85,350,403	20,521,510	28,989,235	27,497,614	28,269,034	35,991,512	28,092,134
All other taxes	107,424,392	106,508,327	38,913,701	39,509,823	23,207,180	22,492,210	45,303,511	44,506,294
Railway operating income	241,551,407	249,075,768	87,755,805	105,502,720	64,697,045	66,484,754	89,098,557	77,088,294
Equipment rents—Dr. balance	42,283,598	40,243,962	18,447,157	18,891,335	*1,114,830	*1,084,668	24,951,271	22,437,295
Joint facility rent—Dr. balance	12,924,464	12,861,559	6,030,995	6,071,791	2,094,392	2,015,788	4,799,077	4,773,980
Net railway operating income	186,343,345	195,970,247	63,277,653	80,539,594	63,717,483	65,553,634	59,348,209	49,877,019
Ratio of expenses to revenue (percent)	80.9	81.8	83.0	82.1	76.6	77.6	81.1	83.8

†Includes income tax and surtax.
*Decrease, deficit, or other reverse item.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Current Publications

BOOKS

The Traffic Dictionary, by George T. Stufflebeam. Fourth edition, enlarged and revised. 292 pages. Published by Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $3.75.

A handbook of domestic and foreign trade and transportation terms, phrases and abbreviations. It contains definitions of more than 1,800 everyday traffic terms, 1,200 abbreviations, and 1,000 names and reporting code marks of railroads, private car lines, and steamship lines. It explains all the organizations, publications, documents, equipment and services employed in the preparation, recording and handling of shipments, as well as technical words and phrases used in warehousing, terminal transfer facilities, claim procedures, practice before tthe I.C.C., and export and import transactions.

The Railways of Britain; Their History, Construction and Working, by W. H. Boulton. 384 pages, illustrations. Published by Sampson Low, 25 Gilbert st., London, W. 1, England. Available in this country from Macdonald & Co., 37 Madison ave., New York 10. $4.50.

Nationalization having brought the British railways to the attention of the public rather pointedly, the author sets out to answer a number of questions concerning them. How did they come into existence; how did they grow into the large concerns that the previous generation knew; why were they formed into "The Big Four" that were taken over by the state; how were they built and maintained; how did they work? Mr. Boulton divides his story into two sections —the first is historical and geographical, dealing with development of the systems; and second covers construction and improvements.

Highways in Our National Life; A Symposium, edited by Jean Labatut and Wheaton J. Lane. 506 pages, illustrations, drawings, maps. Published by the Princeton University Press, Princeton, N. J. $7.50.

Nearly every aspect of the modern highway is considered in this comprehensive volume. It is composed of 45 essays, the first nine of which are historical in nature. The analytical section of the symposium, comprising 36 essays, deals with the functions and forms of the highway today. Groupings in this section follows the five general headings of social aspects, economic problems, legal aspects, physical problems (or what might be called the technique and art of the highway) and highway operation. The essay on The Relation of the Highway to Rail Transportation is written by Dr. Julius H. Parmelee and Earl R. Feldman of the Association of American Railroads.

PAMPHLETS

Railroad Film Directory. 54 pages, illustrations. Published by the Association of American Railroads, Transportation Building, Washington 6, D. C. Free.

This is the third edition of a guide to

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about 200 films and filmstrips owned by or relating to the American railroads. Included are films which feature the history, physical properties, operations, and accomplishments of the railroads and the role which they play as transportation agencies. The list also includes many films which feature agricultural and industrial developments as well as recreational and scenic attractions in the United States, Canada and Mexico. The guide has three major divisions: (1) descriptions of films and filmstrips; (2) address list of railroads, commercial distributors, and industrial firms; and (3) railroad and subject index.

100th Anniversary, 1850-1950, L.&N. 24 pages, illustrations, maps. Published by the Louisville & Nashville Railroad, Louisville, Ky. Free.

Published in commemoration of the 100th anniversary of the L.&N., this handsome full-colored brochure tells the story of the railroad's growth and of the role it has played and continues to play in development of the South.

Summary Tables of the Sixty-Second Annual Report on Statistics of Railways in the United States for the Year Ended December 31, 1948. 240 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. For sale by Government Printing Office, Washington 25, D. C. $1.

Contains complete financial and operating statistics on railroads of the United States, and selected data for the Pullman Company, Railway Express Agency, electric railways, carriers by water, oil pipe lines, motor carriers, freight forwarders and private car owners subject to the Interstate Commerce Act for the year 1948.

Economic Giant. 27 pages, illustrations. Published by the American Trucking Associations, 1424 16th st., N. W., Washington 6, D. C. Free.

Quoting the foreword to this booklet, it "deals with the trucking industry as a creator of employment, as a payer of taxes, and as a purchaser of goods and materials. Reading matter has been reduced to a minimum, and reliance has been placed upon illustrated comparisons to convey at a glance some of the astounding facts about an industry which has truly become an economic giant."

A Dictionary of Electronic Terms, edited by Harry L. Van Velzer. 64 pages. Published by Allied Radio Corporation, 833 West Jackson blvd., Chicago 7. 25 cents.

Containing over 2,500 terms used in television, radio and industrial electronics, the definitions cover mostly modern techniques and equipment, but range from many words no longer in general use, retained for historic reasons, to the new language of color television and the electronics of nuclear physics. Over 125 illustrations and diagrams of components, equipment, and electronic circuits are included, as well as an appendix section containing useful radio data.

Nationalized Transport Operations in Great Britain (First Year: 1948). 54 pages. Published by the Bureau of Railway Economics, Association of American Railroads, Transportation bldg., Washington 6, D. C. Free.

Summarizes the British Transport Act, general plan of organization, the British Transport Commission, the Executives, methods and procedures of acquisition, wartime government control of railways, general financial results in 1948, British railway operations in 1948, railway operating statistics, road transport developments, and preliminary results for 1949 and prospects for 1950.

"Atlantic Coast Line," Fragments of its History During Over a Century, by Champion McD. Davis. 28 pages, illustrations. Address delivered at the "1950 Washington Dinner" of the Newcomen Society of England, Washington, D. C., March 31, 1950. Printed at Princeton University Press, Princeton, N. J.

Quoting Mr. Davis, "This informal review, of fragments only because of the breadth of happenings during more than 100 years, deals with the beginnings and upbuilding of a railroad system which today knits together six important southern states: Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama. It is a story of courageous achievement: of struggles and failures, of determination and success. Men fought for this railroad—in more senses than one."

Graphical Symbols for Railroad Use. 18 pages. Published by the American Society of Mechanical Engineers, 29 W. 39th st., New York 18. 75 cents.

This compilation of more than 300 graphical symbols for railroad use has been approved by the American Standards Association as a new American Standard (Z32.2.5-1950). Most of these symbols had been developed originally by the American Railway Engineering Association. The new expanded standard symbols represent various types of vegetation, hydrography, ground contours, fences, highways and crossings, boundaries, ballasts, bridges, tunnels, buildings, signals, signs, switches and many other items encountered in railroad engineering. A few of the symbols, particularly those for pipe fittings and valves, conflict with those in other American Standards. However, it is believed that no confusion will occur and that desired correlation can be attained gradually in subsequent revisions. Sponsors of the standard are the American Institute of Electrical Engineers and the American Society of Mechanical Engineers.

Investment for Jobs. 36 pages. Prepared by the Economic Research Department, Chamber of Commerce of the United States, Washington 6, D. C. Single copies, 25 cents.

Concern over unemployment has been rising. That this should occur during a period of general prosperity calls for a fresh diagnosis. Has the labor force been growing more rapidly than the investment in job-making facilities? It there a

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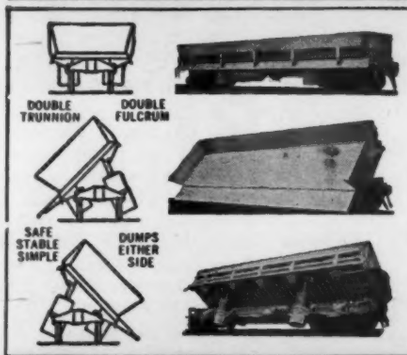

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scarcity of investment funds? Are there any serious obstacles to creation of new jobs? These, and many others, are the questions people are asking. This pamphlet is designed to help answer them.

TRADE PUBLICATIONS

Bulletin 02-105 on Ultrasonic Testing of Rails. Published by Sperry Rail Service, division of Sperry Products, Inc., Danbury, Conn.

Inspection of rail at the joint, at switches, frogs and crossings for bolt-hole cracks and head-and-web separations, using ultrasonic detector cars, is described in this bulletin. The new service is offered separately from the standard rail testing service using Sperry induction detector cars for testing rail in track outside the joint bars. Details of the combined use of both services, providing complete end-to-end testing of rails in track, may be had by addressing Sperry Rail Service.

Wings for the Transit. 16 pages, illustrations. Published by Lockwood, Kessler & Bartlett, Inc., 32 Court st., Brooklyn 2, N. Y.

This publication explains clearly the various stages in preparation of accurate topographic maps from precision aerial photographs. It exhibits samples of these photographs, stereoscopic pairs, mosaics, and photogrammetric maps drawn with the aid of precise stereoplotting instruments.

PERIODICAL ARTICLES

Freight Brings in Nickel-Plated Profits. Business Week, May 13, 1950, pp. 98-102. Published by McGraw-Hill Publishing Company, 330 W. 42nd st., New York 18. Single copies, 25 cents.

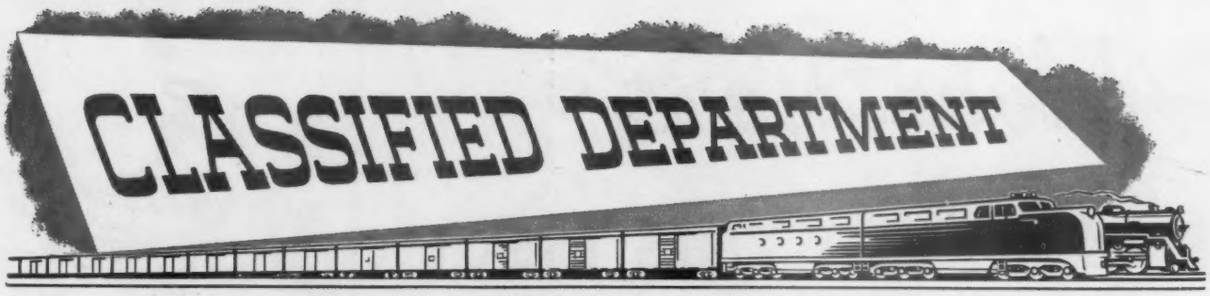
The New York, Chicago & St. Louis (Nickel Plate) is proof that railroading can pay. Last year, only one line beat its earnings record; 1950 promises to be as good.

Exporters' Digest. May, 1950. Published by the American Foreign Credit Underwriters Corporation, 170 Broadway, New York 7. Single copies, 50 cents.

Transportation—one of the most vital and least recognized essentials to development and maintenance of world business and international well-being—is saluted in this special World Trade Week issue of Exporters' Digest. Contributors include leading authorities in rail, air, ocean and truck transport who emphasize how pivotal is "Transportation's Role in World Trade."

Ghost Train Is Dying. Life, May 22, 1950, pp. 82-84. Published by Time, Inc., 330 E. 22nd st., Chicago 11. Single copies, 20 cents.

The train trip between Alamosa and Durango in mountainous southwestern Colorado is one of the twistiest rides in the U. S. Two pint-sized narrow-gage passenger trains a day make the trip, and fanciers of quaint railroads just love them. But their hearts now are being broken by Denver & Rio Grande Western officers who are trying to get permission to abolish passenger service on this small section of its line. The trains' financial losses are "too much to pay for sentiment."



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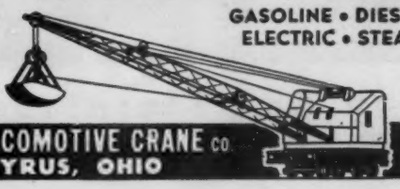

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We here at Simmons-Boardman were very interested in an article published recently in Printers' Ink, entitled "How well are business papers read?" by Roy Eastman, of the Eastman Research Organization. Included in this timely piece were discussions of reader activity and pass-along readership, excerpts from which we reprint below for the information of our readers.

"Reader Activity (per cent of subscribers who read something) averaged 85% for the monthlies, 85% for the weeklies. Range was from 66% (exceptionally low) to 92%. Of the 19, 15 averaged better than 80% active readers.

". . . Pass-along reading is much more important than it is given credit for by either advertisers or publishers. The very term pass-along (reading by others than the original subscriber or addressee) suggests the rather light regard in which it is held.

". . . reading by other than the original recipient is often of greater value to the advertiser and to the publisher than that which is represented by the original subscriber list.

". . . Some months ago we compiled the facts on multiple reading from 34 surveys on 14 business publications. The check covers 1,781 copies of these papers. More than two-thirds (69%) of these copies were read by someone else than the original subscriber."

Exceptionally high readership as well as extensive pass-along reading have long been integral characteristics of Railway Age; we were pleased to have such a notable authority as Mr. Eastman confirm and reiterate their basic value.

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